THE

AMERICAN JOURNAL OF PHARMACY.

NOVEMBER, 1853.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL CONVENTION.

THE AMERICAN PHARMACEUTICAL ASSOCIATION met at the HALL of the MASSACHUSETTS COLLEGE OF PHARMACY, Boston, August 24th, 1853, at 11 o'clock A.M.

In the absence of Daniel B. Smith, President of the Association, the meeting was called to order by Samuel M. Colcord, of Boston, one of the Vice Presidents.

The Secretary being absent, Edward Parrish, of Philadelphia, was appointed temporary secretary. The roll of the Association being called, nine permanent members answered to their names.

A Committee on Credentials, consisting of Charles Ellis, of Philadelphia, C. Augustus Smith, of Cincinnati, and Samuel R. Philbrick, of Boston, was appointed by the chair.

This committee retired, and after a recess reported the following list of delegates, and gentlemen who are properly recommended for membership, viz:

From the Richmond Pharmaceutical Society.—Alexander Duval, James P. Purcell, William S. Beers, S. M. Zachrisson, and W. A. Strother.

From the Cincinnati College of Pharmacy.—William B. Chapman, M. D., J. M. Gordon, M. Allen, C. Augustus Smith, and E. S. Wayne.

From the Philadelphia College of Pharmacy.—Daniel B. Smith, Charles Ellis, William Procter, Jr., Charles Bullock, and Edward Parrish.

From the New York College of Pharmacy.—George D. Coggeshall, J. S. Aspinwall, Thomas B. Merrick, Eugene Dupuy, and Junius Gridley.

From the Massachusetts College of Pharmacy.—Daniel Henchman, William A. Brewer, Thomas Restieaux, T. L. Turner, and H. W. Lincoln.

As a representative of the Druggists and Apothecaries of Terre Haute, Indiana.—Thomas H. Barr.

The following names were reported on the recommendation of members.

From Memphis, Tennessee.—C. B. Guthrie, M. D.

From Boston, Massachusetts.—Thomas Hollis, Andrew Geyer, and Emery Souther.

From Bennington, Vermont.—S. P. Peck.

From St. Johnsbury, Vermont.—J. C. Bingham.

From Portland, Maine.—H. T. Cummings, M. D.

The roll being now called, the following members were found to be present; and those who had not already signed the Constitution, proceeded to do so:

Daniel Henchman,	William A. Brewer,	S. R. Philbrick,
Thomas Restieaux,	Samuel M. Colcord,	T. Larkin Turner,
Henry W. Lincoln,	Emery Souther,	Andrew Geyer,
Thomas Hollis,	H. T. Cummings,	S. P. Peck,
J. C. Bingham,	Henry F. Fish,	T. B. Merrick,
Eugene Dupuy,	Junius Gridley,	Charles Ellis,
William Procter, Jr.,	Edward Parrish,	Alexander Duval,
S. M. Zachrisson,	Joseph Laidley,	C. Augustus Smith,
Wm. B. Chapman,	Thomas H. Barr,	C. B. Guthrie.

On motion, a Committee was selected to nominate officers for the Association. The members of this committee were appointed by the respective delegations, as follows:

Philadelphia, W. Procter, Jr.; New York, J. Gridley; Cincinnati, W. B. Chapman; Richmond, S. M. Zachrisson; and Massachusetts, T. Restieaux.

On motion of J. Laidley, the chair appointed the following additional members to represent the undelegated members of the Association: J. Laidley, H. F. Fish, and E. Dupuy. After a recess, the committee reported the following nominations:

For President.—WILLIAM A. BREWER, of Massachusetts.

For Vice Presidents.—GEORGE D. COGGESHALL, of New York; ALEXANDER DUVAL, of Virginia; C. B. GUTHRIE, of Tennessee.

For Recording Secretary.—EDWARD PARRISH, of Pennsylvania.

For Corresponding Secretary.—WILLIAM B. CHAPMAN, of Ohio.

For Treasurer.—ALFRED B. TAYLOR, of Pennsylvania.

For Executive Committee.—WILLIAM PROCTER, Jr., of Pennsylvania; THOMAS B. MERRICK, of New York; JOSEPH LAIDLEY, of Virginia

The report was on motion accepted.

A motion made by C. Augustus Smith, that the officers now nominated be declared the officers of the Association for the ensuing year, was, after some discussion, negatived.

It was resolved to proceed to ballot separately for the officers named.

C. Ellis and C. A. Smith were appointed tellers, who, after the ballot, reported that all of the gentlemen named had been duly elected to the several offices for which they were nominated.

The President was conducted to the chair, and made an appropriate address.

[In complying with the expressed wish of the Association, the President elect desired to acknowledge his thankfulness for the confidence reposed in him, without attempting a speech, else, like Icarus, in his flight from Minos, he might find his means inadequate, and be precipitated into the Ægean of ill success.

Alluding to the numerous and varied qualifications of the pharmaceutical body in the United States, he remarked that the Association was designed to elevate the status, not merely of the members, but of the whole profession, and through them to benefit the public at large.

In relation to the duties of the chair, he promised his earnest efforts to administer them impartially, in accordance with the received rules of deliberative assemblies, and claimed the sympathy and support of his brethren.

As a delegate from the Massachusetts College of Pharmacy, he welcomed the Association to their Hall, and hoped it might prove a pleasant professional home to all who met on the occasion. He announced that the room would be open at all times during the sessions of the Association; that provision was made for transmitting the letters, &c., to and from the post-office; and that a messenger would be in attendance at the service of the members. Mr. Brewer concluded his remarks by offering for the inspection of the members, a cabinet of specimens of indigenous medicinal plants and roots, pressed, and in bottles, prepared for the occasion by Mr. S. T. Atherton, of the United Society, Harvard, Massachusetts.—EXEC. COM.]

The report of the Treasurer was received, read, and referred to C. A. Smith and H. F. Fish, to be audited.

The report of the Executive Committee for the past year, was read by Professor Procter, its chairman, as follows:

The *Executive Committee* appointed in October last to carry out the purposes of the Convention then held, Report—that immediately after the adjournment of that body, they prepared an account of its proceedings, embracing the chief topics of discussion, with an appendix consisting of the Constitution and Code of Ethics of the Association, together with the reports of Dr. Bailey and Mr. Hamilton on the Inspection of Drugs, of which the accompanying pamphlet marked A, is a copy. One thousand of these were printed and distributed over nearly every State in the Union, by the members of the Committee.

The expenses incurred in getting up the "Proceedings," were not met by the funds in the treasury. The deficit, together with the expenses incident to the distribution of the pamphlet, &c., will be found in the accompanying document marked B.

It having been "Resolved that the Executive Committee be requested to obtain, through the several Colleges of Pharmacy and Pharmaceutical Associations," answers to the resolutions adopted by the Convention in reference to statistics; this Committee communicated with the several bodies indicated, and have received reports from Boston, Philadelphia, Richmond, Cincinnati, and New York, which are marked C, D, E, F, G, in the annexed papers.

As a large portion of the United States lies beyond the immediate influence of the organized bodies, the Committee deemed it proper to take advantage of the Circular issued by the Philadelphia College to query in the several States south and west, and although the apathy of many persons addressed has prevented the resulting information from being full and uniform, yet it is sufficiently interesting to communicate. In reference to the Richmond report, it is proper to state, that it is not the result of any action of the Society, but comes from the president in his individual capacity, and its brevity has induced the Committee to avail themselves of the full communications of Mr. Laidley, of Richmond, Dr. Cooke, of Fredericksburg, Dr. Stabler, of Alexandria, and Mr. C. A. Santos, of Norfolk, to present a view of the condition of pharmacy in Virginia. In regard to most of the Southern and Western States, our information has been only

enough to get a general idea of the condition of our *art* there; the large proportion of agricultural population, and the few large towns and cities that exist, give a more uniform cast to the pharmaceutical peculiarities of that region. The untimely death of our associate, Mr. C. L. Bache, of San Francisco, deprived us of an expected report on the state of Pharmacy in California; yet, owing to the thoughtfulness of Mr. Gustavus L. Simmons, of Sacramento, in that State, we are enabled to give a partial account of it, which will be found, with the other information, in the document marked H.

The Executive Committee, although not specially so instructed, have deemed it their province to bring forward such suggestions, regarding subjects properly claiming the consideration of the Association that have not been specially referred to Committees, as have presented themselves in the course of their official duty, and now offer the following propositions, viz:

1st. To increase the future usefulness of the Association, it is proposed that a system of local secretaryships be adopted, which in the beginning may be limited to the larger cities and chief towns, and so distributed over the several States, as to enable the Corresponding Secretary and the Executive Committee to obtain and distribute information in an effectual manner. At first, it is proposed to appoint the local secretaries from among pharmaceutists known to reside in the localities chosen; and afterwards, if more agreeable to the body at large, in each place, the name of a person for secretary may be suggested by his brethren as their medium of communication, to be confirmed at a meeting of the Association. We believe that there are qualified persons who have the good of the profession at heart in most of the cities, and that such an organization would greatly increase the power of the Association in carrying out its disinterested measures for the advancement of pharmacy.

2d. It is recommended that the collection and arrangement of the Statistics of Pharmacy in the United States, be committed to a special committee, properly authorized to act for the Association, in such manner as shall most effectually and speedily obtain a list of the reputable druggists and pharmaceutists in each place; ascertain the degree to which medicine and pharmacy are separated; the condition of dispensing pharmacy; the condition and progress of preparative or manufacturing pharmacy; the extent to which the apprenticeship system prevails, and whether any attention is given to furnish apprentices with proper books for the study of their business; and finally, whether there is any disposition to organize local societies.

3d. It is suggested that the subject of pharmaceutical education be entrusted to a special committee at the commencement of the session, that they may have time to prepare an address to the pharmaceutists of the whole country, which shall enter into the practical difficulties which oppose the attainment of pharmaceutic knowledge by assistants and apprentices, point them out, and encourage the brethren to extend reasonable aid to those in their service, both by personal interest, and by providing books and the opportunity to use them;—and also shall recommend attention to the proper preparatory education and mental fitness of apprentices for the responsible offices involved in their duties.

4th. It is proposed that the *idea* of universally adopting a single definite name, which shall indicate the qualification for preparing and dispensing drugs and medicines, as possessed by thorough-bred chemists and druggists, or apothecaries, be considered, and its propriety decided on. The word "Physician" indicates a person educated to practice medicine in all its branches; why should not "Pharmacian" define a qualified practitioner of pharmacy?

5th. It is recommended that the Association shall earnestly advocate the *extensive issue* of a *cheap* and accurate edition of the United States Pharmacopœia; say at the price of seventy-five cents or one dollar. Of the large number of persons who, in this country, lay claim to the names of apothecaries and physicians, a great proportion have never seen the Pharmacopœia as a separate and distinct work, a fact easily understood, when it is stated that but 1500 copies are published in ten years! In many localities the U. S. Dispensatory is considered to be the Pharmacopœia. Physicians are constantly prescribing medicines under unofficinal names, and apothecaries making officinal preparations by

foreign formulæ, because in the dispensatory the receipes are all commingled in such a manner as to lead to confusion. This would be prevented, and a greater uniformity of practice created, by making the Pharmacopœia, with its clearly defined recipes, the guide at the counter, and in the laboratory, for the officinal preparations.

6th. We believe that the action of the Association should not be limited to the practical, the ethical, and the educational interests of the profession,—should not stop within the limits of self-improvement. American pharmaceutists owe a large debt to their brethren in Europe, for a constant influx of knowledge, the result of their past and present investigations in pharmacy and its accessory sciences; and the time has fully arrived, when, as Americans, they should feel bound to render a larger return than individual efforts have heretofore accomplished. The pharmaceutical societies of Europe, offer annually, prizes for the determination of questions deeply interwoven with the practice or science of pharmacy, and thus elicit valuable accessions to existing knowledge. We believe that the Association is now competent to adopt a course of this kind, as an incitement to dormant ability, and to awaken laudable ambition. At first, if the idea is adopted, the prizes should be limited in value, except as symbolic of reward for honorable and successful enterprise.

To make the proposition clearer, a few questions appropriate for such objects will be instanced.

a. It is conceded that Digitalis of American growth is less active and efficient as an arterial sedative and diuretic than that of English origin. Is this deterioration due to the less abundant formation of *digitalin;* to its modification; or to any other definable cause?

b. What are the impediments, if any exist, to the free cultivation of Colchicum autumnale in the United States, so as to preserve its power unimpaired; and is it true that the recent cormus is more active than the same carefully dried, and if so, why?

c. Do Hyoscyamus and Belladonna, grown in the United States, contain the active principles in the same proportions as the European plants?

d. Spigelia is admitted to possess positive anthelmintic power. Does this power reside in a distinct, well-defined principle, capable itself of producing the effects of Spigelia; if so, isolate and describe it?

e. The best essay on extemporaneous pharmacy which shall treat of the incompatible combinations most usually prescribed, the best manner of avoiding them, and the most efficient methods of proceeding in effecting the union of substances that are physically incompatible, as emulsions, certain liniments, certain pill ingredients, &c.

f. For the best essay on the identification of volatile oils when mixed, their preservation, and the actual effects of light and air on them, under the ordinary circumstances that they are kept in the shop, so as to decide the question whether all of them, or only a part, should be kept in the dark, to prevent change?

g. For an essay which shall develop the commercial history of all drugs indigenous to the United States, as senega, spigelia, serpentaria, &c., as regards the manner and places of their collection for the supply of commerce, the annual amount collected, and the channels through which they enter general commerce.

h. For the best essay on the construction and material of pharmaceutical apparatus, including that for evaporation, distillation and solution more especially, as regards economy, convenience and effectiveness; with a view to the ordinary wants of a thorough pharmaceutist.

Such are a few of the questions which might be offered. The nature and value of the prizes, and the local or general invitation to the competition, will require mature consideration, should the idea be adopted.

7th. An efficient committee might be appointed to inquire into the nature, extent, and locality of *home adulterations*, and propose a remedy.

8th. Whether it would be advisable to appoint a committee to consider the subject of state and municipal laws in relation to controlling the trade

in drugs and medicines, and whether such laws would be likely to prove salutary, without oppressing the well-disposed druggist and pharmaceutist.

(Signed) WILLIAM PROCTER, JR.,
GEORGE D. COGGESHALL,*
On behalf of the Executive Committee.

Pending the reading of the Statistical reports accompanying it, the Association, on motion of D. Henchman, adjourned till half-past 3 o'clock in the afternoon.

AFTERNOON SESSION.

The members generally assembled, the President in the chair.

The Committee to audit the Treasurer's account, made a written report that it was correct, and they were discharged.

In the absence of the Treasurer, W. Procter, Jr., was appointed to serve in his place, and proceeded to collect the annual contributions of members present.

The following, offered by Jos. Laidley, was adopted.

Resolved, That the members and officers of the Massachusetts College of Pharmacy, be invited to attend the sittings of the present meeting of the American Pharmaceutical Association.

The Chairman of the Executive Committee proceeded with the reading of the documents accompanying his report, till finished. On motion of C. B. Guthrie they were accepted.

The Committee appointed last year to consider the whole subject of the Inspection of Drugs, with reference to fixing standards for imported drugs, presented a report, which was read, and on motion accepted.

[The report of this Committee was a voluminous document, and not being among the papers authorized to be published in the "Proceedings" by the Association, we have made a few extracts, to render the minutes which follow more intelligible than they are in the authorized publication. The report was written by the chairman, Alfred B. Taylor, of Philadelphia, and signed by that gentleman and Mr. Meakim, of New York; the other members of the Committee, Dr. Stewart, of Baltimore, and Mr. Burnett, of Boston, did not see or sign it.

The Committee frankly acknowledge the very great difficulty of carrying out the view of the Convention of 1852, by fixing standards for the judgment of drugs. They say: "To decide between articles of so high a standard as to be just below passable, and others of so low a standard as to be barely admissible, or, in other words, between the best rejected and the worst admitted drugs, is a task requiring the exercise of sound judgment and the wisest discrimination." In the case of chemical preparations, many of the gums, gum resins, some of the roots, woods, barks, &c., it will perhaps be no very difficult matter to assign satisfactory standards; that, whilst they will exclude adulterated and deteriorated articles, will not interfere with the business arrangements of the honest importer; whereas, in the case of herbs, leaves, flowers, and extracts, many of the essential oils, &c., it will be very troublesome, if not utterly impossible, to devise means whereby they may be uniformly judged of."

"After a careful consideration of the subject, the Committee believe that the opinion advanced by one of its members, Dr. Stewart, at our last Convention, that "all varieties of drugs that are good of their kind should be admitted by the

* Mr. Joseph Burnett, the third member of the committee, was absent in Europe, and did not see or sign the report.

special examiners," is correct; and that it forms the only safe and just basis on which to found a rule whereby the Examiner should be governed. If an article is to be condemned on the ground that it will or may be used for adulterating purposes after it is imported, it is difficult to see where will be the limit to these stoppages."

"The question naturally arises, What constitutes 'good of their kind?' a question much more readily asked than answered. To define precisely what drugs are so, involves a thorough knowledge of the materia medica, of the properties and appearances of the articles composing it, of their deteriorations by age, moisture, and other causes, together with the adulterations they are liable to, and the means of detecting them.

"The Committee have thought that this can be most readily and effectually settled by the method they are about to propose. We have prepared and herewith present two lists, embracing all the articles recognized by the United States Pharmacopœia as constituting the materia medica, together with the preparations that are officinal in that work. The first list comprises chemical preparations and such other articles as we think it practicable to devise standards for; whilst the second list is composed of herbs, roots, flowers, &c., which cannot so well be judged of by their chemical constituents as by their physical and apparent properties. It will be seen that we have also included in this second list the essential oils, tinctures, extracts, &c., articles that unfortunately are often adulterated or deteriorated, but many of which, we must confess, we are at a loss how to test, even when we suspect them to be so.

"We propose that these lists be considered by the Association, article by article, so that we may have the opinion of the Association as to what articles they may consider it practicable to have standards for." * * *

"When the list is arranged, let it be apportioned off amongst the different Pharmaceutical Associations present; whose duty it shall be carefully to examine the articles assigned to them, especially as regards their deterioration and adulteration, and to devise tests for the detection of such adulterations, and at the same time to arrange standards of purity, whereby they may be judged, not only by the drug examiners, but also by druggists and physicians: the whole to be reported to the Association next annual session."

The Committe then enter into a discussion of the late circular of instructions issued by the Treasury Department, and take exceptions to several parts of it. The direction that all articles of merchandise used partly in medicine shall be submitted to examination by the Special Examiner before passing the Custom-house, they considered unjust, as bearing oppressively on manufacturers, who consume of many of these articles in by far the larger proportion, as white lead, arsenic, litharge, mastic, galls, &c.

They think a wide discrimination should be made in favor of the manufacturer, when bonds are given for the legitimate use of articles required by them.

They think European rhubarb should be admitted.

They believe some of the standards adopted are too high for practical purposes. The standard for opium, for instance, "nine per cent. of pure morphia," which is equal to 11.89 per cent. of the crystallized sulphate, is above the average yield of good commercial opium.

They consider the standard for elaterium (30 per. cent. of elaterin) too high.

They regard the amount of soluble matter in rhubarb and senna, as a bad criterion of their quality.

In relation to secret or patent medicines, they believe the law gives the Examiner no right to exclude them, unless they fall under its condemnation. They wish it understood that they are in favor of excluding these medicines, if legally done, but do not believe the present law gives the power.

They "think the construction recently put by the Hon. Secretary of the Treasury upon the fourth section of the law, as passed by Congress, 26th June, 1848, is erroneous and illegal;" because it prevents the report of the analytical chemist from being *final*, as positively asserted by the law.

The Committee conclude their report by declaring that "the best devised system of standards and tests will be of no avail unless the officers to whom is

entrusted the execution of the law have the requisite qualifications of judgment and ability, or, in other words, are honest and competent; and we think that such an officer, acting under a few general instructions, relying on a correct knowledge and sound judgment, with a determination not to admit adulterated or deteriorated drugs, will find much less trouble in carrying out the law satisfactorily, than he would under more complicated instructions."—EDITOR AMER. JOUR. PHARM.]

C. B. Guthrie moved the report of the Committee on the Sale of Poisons be postponed till to-morrow. The motion was not agreed to, and the report was accordingly read.

The Committee to whom was referred "the subject of the indiscriminate sale of poisons, as now conducted by apothecaries, druggists and others, as regards the practicability of effecting some useful reform in the present state of the traffic," Report: that they have been engaged since the time of their appointment in endeavoring to collect information relating to the subject, and in considering it in view of the object of the Association; yet they have been but partially successful. In the course of their inquiry the measures adopted by European legislators, naturally claimed attention, and what they now have to offer will include a notice of the measures legalized in Europe, the condition of the traffic in this country, and suggestions tending to regulate the sale of *popular* poisons in this country.

In Prussia, and perhaps in Germany generally, the law requires the apothecary to keep poisons in a closet under lock and key, and not to sell them but under certain conditions to persons free from suspicion. The poisonous substance, be it arsenic or other, must be enclosed in a box, tied, sealed and inscribed with the German or French name, and the Latin name; and marked with a *Death's head* or *three Crosses*. It is also necessary, in some of the German States, for the purchaser to give a receipt declaring the name and quantity of the poison, that it was dispensed according to regulations, and that the seller is exonerated from all blame for its misuse.

In France, the law designates the substances considered poisons in view of the Government, which are required to be kept under lock and key, much to the annoyance of the Pharmaciens. These substances are *Hydrocyanic Acid*, the *poisonous vegetable alkaloids* and their *salts*, *Arsenic* and *its preparations*, *Belladona* and its *extract and tincture*, *Cantharides* in substance or extract, *Chloroform*, *Hemlock* and its extract and tincture, *Cyanide of Mercury*, *Cyanide of Potassium*, *Digitalis* its extract and tincture, *Tartar Emetic*, *Hyoscyamus* its extract and tincture, *Nicotine*, *Nitrate of Mercury*, *Opium* and its extract, *Phosphorus*, *Ergot of Rye*, *Stramonium* extract and tincture, and *Corrosive Sublimate*.

In Great Britain, the country most analogous to our own in the character of its population, and the legal and economical usages that exist, the sale of poisons until recently was completely unrestrained by law, except perhaps a few municipal regulations. In the latter part of 1849 the subject of the loose manner in which the sale of poisons was conducted, and the frequent ill results that followed, was brought to the attention of the House of Commons by the Provincial Medical and Surgical Association, praying that no druggist be allowed to sell arsenic without a license, under penalty; that *no person* be allowed to sell small quantities of arsenic unless combined with some distinctive coloring material, that every purchaser must have a witness, and that every vender should keep a strict record. The petitioners stated that, of the fatal cases of poisoning, *one-third* were from arsenic, and that in 1837–8 these cases amounted to 185!

Pending the action of Parliament, the subject was referred to a Committee by the Council of the Pharmaceutical Society, who, as a preparatory step, issued a circular of inquiries to 1600 members, over England and Scotland, querying whether the parties sold arsenic; under what regulations, if any, for what objects and to what classes of persons, what trades employ it, whether general

dealers sell it, would it do to prohibit its retail sale, how is it dispensed, what number of accidents and whether these occur from its use by agriculturists?

The Committee reported that a majority of the *Chemists* and Druggists require witnesses in selling arsenic, label the inner and outer wrappers, and some color it. The classes of persons who buy arsenic are colorists and chemical manufacturers, candle-makers, farmers, flock-masters, veterinary surgeons, shipwrights, glass manufacturers, and dyers, in large quantities; and braziers, whitesmiths, bird stuffers, gamekeepers, gardeners, grooms, whitewashers, painters, pyrotechnists, ratcatchers, and housekeepers of all grades, for vermin, in small quantities. They ascertained that arsenic was employed most extensively through the agricultural districts, both for *sheep-dipping* and for *steeping wheat*. About 40 lbs. of arsenic are required for every 1000 sheep to kill vermin. Of 728 answers, 509 advocated prohibition; yet the numerous legitimate uses of the poison render its sale necessary. One large farmer had killed in a year more than 40,000 rats. The Committee arrived at the following conclusions, viz:—

1st. That with regular chemists and druggists, proper precautions are taken and few accidents occur.

2nd. That the unrestricted sale of poisons in general by *unqualified persons* is the great source of danger.

3rd. And that the total prohibition of the retail sale of arsenic is impracticable and inconsistent with the requirements of legitimate trade.

Subsequently on the 5th of June, 1851, Parliament enacted a law requiring

1st. That all arsenic sales shall be witnessed by a third party when the purchaser is unknown to the vender.

2d. That all arsenic sales shall be registered in a book in a specified form.

3d. That not less than ten lbs. of arsenic shall be sold unless colored by soot or indigo, unless for a specified purpose in the arts, under a penalty of $100.

4th. That the Act shall not apply to arsenic used medicinally, or to the intercourse between wholesale and retail dealers.

5th. And that the word "arsenic" includes all preparations of arsenious and arsenic acids and other colorless poisonous preparations of arsenic.

The Act was confined to arsenic because it was the most generally known and most accessible poison, and because restrictive legislation on the whole list of poisons was looked upon as impossible. The poison is sold in all quantities, from a pennyworth up, at petty stores and by general dealers in England, and the Arsenic Act, without depriving these of their right to sell, compels them to do it as above.

To the correspondence they have instituted, your Committee have received answers from parts of Pennsylvania, Vermont, New Hampshire, Maryland, the District of Columbia, Virginia, North Carolina, Georgia, Florida, Mississippi, Louisiana, Tennessee, Missouri, Indiana, Ohio, and California.

It appears that but little State legislation has taken place in regard to the sale of poisons. In Ohio an Act somewhat similar to the English "Arsenic Act" was passed soon after the latter, requiring the poison to be mixed with soot or indigo before being retailed, yet but little regard is had to it in practice.

[The following is a copy of the Ohio law, taken from the Cincinnati Report.

Sec. 1. *Be it enacted by the General Assembly of the State of Ohio*, That it shall not hereafter be lawful for any apothecary, druggist, or other person in this State, to sell or give away any article belonging to the class of medicines, usually denominated poisons, except in compliance with the restrictions contained in this act.

Sec. 2. That every apothecary, druggist, or other person who shall sell or give away, except upon the prescription of a physician, any article or articles of medicine belonging to the class usually known as poisons, shall be required:

1st. To register in a book kept for the purpose, the name, age, sex, and color of the person obtaining such poison.

2d. The quantity sold.

3d. The purpose for which it is required.

4th. The day and date on which it was obtained.

5th. The name and place of abode of the person for whom the article is intended.

6th. To carefully mark the word "poison" upon the label or wrapper of each package.

7th. To neither sell nor give away any article of poison to minors of either sex.

SEC. 3. That no apothecary, druggist, or other person, shall be permitted to sell or give away any quantity of arsenic less than one pound, without first mixing either soot or indigo therewith, in the proportion of one ounce of soot or half an ounce of indigo, to the pound of arsenic.

SEC. 4. That any person offending against the provisions of this act, shall be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined in any sum not less than twenty, nor more than two hundred dollars, at the discretion of any court of competent jurisdiction.

SEC. 5. This act to take effect and be in force, from and after its passage.—*Exec. Comm.*]

In New Hampshire a State law exists requiring "Every apothecary, druggist, or *other person*, who shall sell any arsenic, corrosive sublimate, nux vomica, strychnia, or prussic acid, shall make a record of such sale in a book kept for that purpose, specifying the kind and quantity of the article sold, and the time when, and the name of the person to whom such sale is made, which record shall be open to all persons who may wish to examine the same."

The other sections exempt physicians prescriptions, and provide a penalty of $100, for the violation of the first section. Mr. Edward H. Parker, of Concord, N. H., in giving this information, states, that the law is almost if not entirely ineffectual, and that not more than *one* in five of the druggists pretend to keep such a record, and some are not even aware of its existence. The effect has been to confine the sale of poisons to the druggist, as "grocers and shop-keepers rarely, if ever, retail arsenic or other poisons specified in this law."

[The following law of the State of New York is derived from the report of the N. Y. College of Pharmacy, on statistics. "Every apothecary, druggist, or other person, who shall sell or deliver any arsenic, corrosive sublimate, prussic acid, or any other substance or liquid usually denominated *Poisonous*, without having the word poison written or printed upon a label attached to the phial, box or parcel in which the same is sold; or who shall sell and deliver any tartar emetic, without having the true name thereof written or printed upon a label attached to the phial, box or parcel containing the same, shall upon conviction be adjudged guilty of a misdemeanor, and shall be punished by a fine not exceeding one hundred dollars." *Exec. Comm.*]

Through Mr. Peck, of Bennington, it appears that no law bearing on the sale of poisons, exists in Vermont. The regular druggists take generally the proper precautions, but at nearly all of the little stores in the villages throughout the state, arsenic, opium, and even *strychnia* are sold without being labelled.

In the large cities, the better class of druggists and apothecaries are exceedingly careful in the sale of all poisons; many refuse to sell arsenic at all except in medicine, and strychnia and poisons of that kind are refused without a prescription, except in special cases, where the applicant is well known and the purpose obvious to the vender. Yet it cannot be denied that many others, while careful to label poisons, are not sufficiently discriminative in their sale. It has become usual in many places to employ corrosive sublimate as a *bug poison*. Many druggists require that the purchaser shall bring a bottle that can be properly labelled—some are willing to sell the poison in substance, and risk its subsequent appropriate use. In view of the abundant employment of this poison in families, often put in the hands of servants—it is surprising that so few accidents occur with it.

Our inquiries from correspondents in the South and South West, exhibit that no State laws exist restricting the sale of poisons, to persons not suspicious, yet there is an universal practice of refusing arsenic and other poisons to the black population, unless they bring a satisfactory order from employers or owners. In middle Florida, "opium, morphia, strychnia, nux vomica and arsenic" can

be procured from the general storekeepers without difficulty, and the practice of keeping poisons for destroying vermin and animals, by the country storekeeper, is very common throughout the whole Western, Southern, and Middle States. Perhaps the chief demand for arsenic from country stores is by farmers and millers as a *ratsbane*. The tastelessness and effectiveness of this poison renders it superior to all others for this purpose, and hence its employment in mills and barns, where it has too often occasioned accidents to horses and to poultry; to the latter from the sweepings of the mill floor, sold commonly for the purpose of feeding such stock. Several valuable horses were destroyed in this way near Bladensburg, Maryland, a few months since.

Our correspondent at Sacramento California, Mr. G. L. Simmons, states, "that large quantities of all kinds of poisons are sold by grocers as well as by druggists. The larger part is used for the destruction of animal life. The regular sales of *strychnia* must be immense. Its more speedy effects than most other poisons is liked by the "Ranche-men," who are the principal customers. Arsenic, is also sold but chiefly as *ratsbane*. Since the year 1849, no case of poisoning by arsenic has come to my knowledge."

We have reason to believe that a large proportion of the strychnia made, is used to poison wolves and other carnivorous wild animals in the newly settled territories where the population is sparse. It is generally admitted, that the sale of arsenic by druggists in the Atlantic cities has increased many fold within ten years. The quantity is vastly too great for use as a poison, and we believe the demand is chiefly attributable to the requirements of new branches of manufactures, and, perhaps, by wool growers. In reference to strychnia, the increased use of which is directly attributable to the pioneers and hunters of our extensive and rapidly peopling territories, both for the purposes of the fur trade, and protection from the dangerous carnivora, it may be stated that from the best data the committee can arrive at, between 5,000 and 6,000 ounces are manufactured annually in this country, from about 120,000 pounds of nux vomica, besides what is imported; and that one manufacturer of Philadelphia, in the year ending June 3, made 1840 ounces from about 40,000 lbs. of that drug.

As regards cases of suicide, the poison most frequently chosen is laudanum or opium, not only because it can be readily obtained without suspicion, but because the suffering is avoided. The immense increase in the consumption of opium and its preparations, is a subject that deeply concerns the well wisher of society. Their substitution for alcoholic liquids is but too frequent. The Committee have not entered into this branch of their inquiry, however, and have not obtained any facts to communicate.

In making any suggestions with a view to remedying the evils appertaining to the trade in poisons, the committee feel the necessity of keeping in sight the habits and peculiarities of the people who are consumers, and do not believe that the stringent measures adopted in Europe are calculated to work well in this country. The absolute free trade which now exists, and its general use as a *ratsbane*, exhibits a remarkable carefulness in the use of arsenic, in so far as fatal accidents are concerned. We believe that by far the larger portion of apothecaries and retail druggists are careful in labelling this poison, and observe some discrimination in its sale. As a class, they are better fitted by their knowledge and judgment to guard against mal-uses than general dealers. We are therefore prepared to recommend to the Association that the State Legislatures, who have not enacted laws on this subject, be petitioned to pass laws in their several jurisdictions, confining the sale of arsenic, corrosive sublimate, opium, strychnia and other poisons popularly known as such, for destroying life, to druggists, apothecaries and physicians, who shall keep an accurate record of such sales. That such sales shall not be made to minors or servants, unless properly authorized by a responsible person; that all packages or bottles shall be distinctly labelled with the name of the poison, and the word "poison!!" or a death's head symbol, conspicuously printed, and that any sale of poisons followed by accident, in which these precautions shall not have been observed, be considered a misdemeanour punishable by legal process.

And to further recommend that the druggists and apothecaries of the United

States, do voluntarily adopt a system of precautions in the sale of poisons, both for their own sake and that of the community, in view of the probable non-action of the legislative bodies.

They believe that the community can be needfully supplied, even in the rural districts, from their physician, who necessarily keeps medicines, or from the apothecary in the nearest town, and a check would thus be given to the facility of obtaining the poison, by the consequences of neglecting the legal precautions.

WILLIAM PROCTER, JR.,
S. R. PHILBRICK,
ALEX. DUVAL,
GEO. D. COGGESHALL,
Committee.

On motion, the report was accepted.

The Committee on Secret or Quack Medicines introduced a written report, which was read, and, on motion, accepted.

C. Augustus Smith moved, that when we adjourn, we do so to meet at half past seven o'clock this evening, which was adopted.

The following record was, on motion of the Secretary, directed to be entered on the minutes, by a unanimous vote.

This Association has learned with deep regret the death of an esteemed associate, present at its last annual meeting, Charles L. Bache, of San Francisco, California. His amiable disposition, and the probity of his professional and business character, located as he was upon the very frontiers of the profession of pharmacy, had gained for him the respect and esteem of the members of the Association, and have drawn from them this spontaneous tribute to his memory.

EVENING SESSION.

Vice-President Alexander Duval in the chair.

The report of the Executive Committee was taken up, and the suggestions therein contained, of subjects proper to claim the attention of the Association at its present meeting, were considered in the order in which they were introduced in the report.

1st. *The proposition for "Local Secretaryships."* After much discussion in regard to the proper functions, rights, and mode of appointment of these officers, and whether they should be constituted full members or only semi-official correspondents of the Association, C. B. Guthrie, of Tennessee, offered the following resolution:

"Resolved, That Mr. ———, of ———, in the state of ——— be and is hereby appointed local correspondent for this Association, for the ensuing year." These blanks to be filled, and the number selected in this way to be increased at the pleasure of the meeting. Pending the consideration of this, C. A. Smith moved a reference of the whole subject to a Select Committee, to mature a suitable proposition to meet the object, and report as early as practicable, which was adopted. The chair appointed C. A. Smith, H. F. Fish, and W. Procter, Jr.

2d. *The recommendation for a Special Committee on the collection*

and arrangement of the statistics of pharmacy in the United States, was adopted, and five fixed upon as the number of members of the Committee. The chair appointed the following members to the service: C. B. Guthrie, T. B. Merrick, Joseph Laidley, W. B. Chapman, and H. T. Cummings.

3d. *The preparation of an Address on Pharmaceutical Education.* This was on motion referred to a Special Committee of three, to report at the next annual meeting. William Procter, Jr., (Chairman,) David Stewart and John Meakim, were subsequently appointed by the Chair to this duty.

4th. *The suggestion that the idea be entertained of adopting a definite name to define a qualified practitioner of pharmacy.* A motion was made that the members of the Association adopt the name Pharmacian to designate their profession, but objection being made to it, the resolution was withdrawn.

5th. *The recommended issue of a cheap edition of the Pharmacopœia.* Professor Procter offered the following resolutions, which were adopted:

Resolved, That in the opinion of this Association, the cause of pharmaceutical progress will be greatly advanced by the publication of a large, cheap, and correct edition of the United States Pharmacopœia, in duodecimo form, as it will enable every apothecary and physician to possess a copy of that Code, and thus familiarize the classes of persons for whose government it was created, with its real nature, extent, and requirements.

"Resolved, That the Committee of Revision and Publication of the United States Pharmacopœial Convention of 1850, be earnestly requested to authorize the issue of such an edition of that work."

The Committee to whom the proposition for local secretaryships was referred, now made a report, proposing an additional article to the second section of the Constitution, which, under the rules, must lay over to a future sitting.

Also, E. Parrish moved, in section 2, article 4, of the Constitution, to strike out the words, "in attendance at the annual meetings."

Resuming the consideration of the Report of the Executive Committee, the meeting proceeded to consider

6th. *The suggestion in regard to appropriate subjects for prize essays.* This was on motion postponed.

7th. *The proposition in relation to home adulterations* was adopted, and on motion of C. B. Guthrie, it was resolved to appoint a Committee of three to inquire into the nature, extent, and locality of home adulterations, and propose a remedy. C. B. Guthrie, (chairman,) G. D. Coggeshall and C. A. Smith, were subsequently appointed by the Chair.

8th. *The subject of State and Municipal laws controlling the sale of drugs.* This was on motion postponed.

Adjourned till half-past nine o'clock to-morrow morning.

August 25th—Morning Session.

Vice President Alexander Duval presiding.

The minutes of yesterday's session were approved.

George D. Coggeshall, of New York, who was absent at the previous sessions, appeared and took his seat as first Vice-president.

The proposal to amend the Constitution, offered yesterday by the Special Committee on local secretaryships, as amended by E. Parrish, was now read and adopted, as follows:

Addition to section 2d, Constitution, article 6. "At each annual meeting the Association may appoint correspondents in any part of the Union, whose duty it shall be to communicate to the Corresponding Secretary any information which they may be enabled to obtain on subjects of interest to the Association, such correspondents who are not members, when accepting the appointment, to be entitled to membership on signing the Constitution and Code of Ethics, and on payment of the annual contribution."

The further proposition to strike out from section 2, article 4, the words "in attendance at the annual meetings," after some discussion, was adopted as follows:

"Article IV. Every member shall pay into the hands of the Treasurer the sum of two dollars as his yearly contribution."

Andrew Geyer, of Boston, moved the following, which was adopted:

Ordered, That a Committee of three be appointed to inquire into the expediency of obtaining a form of certificate of membership, for the use of this Association, with such insignia or device, or otherwise, as shall in their opinion be deemed suitable, and report their doings at the next annual meeting.

The chair appointed A. Geyer, chairman, and C. Ellis and Joseph Laidley, the Committee.

The Committee on Credentials introduced the names of Ashel Boyden, of Boston, Mass.; Thomas Farrington, ditto; William B. Little, San Francisco, Cal., as recommended for membership. The former being present, signed the Constitution and paid his yearly contribution.

The President of the Association, being now present, resumed the Chair. The report of the Committee on the Inspection of Drugs was now on motion taken up.

Geo. D. Coggeshall, of New York, offered a letter received by him from Dr. Bailey, special examiner of drugs at the port of New York, which on motion was read.

S. M. Colcord, of Boston, moved it be received and placed upon the files. Adopted.

[This Letter was obtained from Dr. Bailey, through the solicitation of Mr. Coggeshall, as a report on the progress of Drug Inspection since last meeting. The letter is too long to insert entire, yet as only one item in it was directed to be published by authority of the Association, we will give a general idea of its contents. Dr. Bailey cheerfully responds to the request, to the extent permitted by his slight leisure. In reference to the quantity of drugs imported and passed at New York, he regrets that it is not in his power to give an accurate statement, but believes that the average is about 200,000 packages annually. The weight or value he has no means of determining. This inability arises from no provision having been made by Congress to keep such records, which would require the services of a clerk. In his communication of last year, to be found in the proceedings of the Convention of 1853, Dr. Bailey gave an exposé of all the important articles rejected by him to that date, and remarks, "I now in continuation, mention the more important articles rejected by me during the some eleven months that have transpired since the date of the communication above referred to:

Senna,	11,820	lbs.
Rhubarb,	610	"
Spurious Peruvian Bark,	38,459	"
Scammony,	495	"
Opium,	675	"
Squills,	1,537	"
Sugar of Lead,	11,017	"
Gum Benzoin,	860	"
Lac. Sulphur,	3,630	"
Carbonate of Magnesia,	3,900	"
Calcined Magnesia,	875	"
Manna,	720	"
Aloes,	246	"
Sarsaparilla,	4,370	"
Guaiacum Resin,	1,130	"
Gum Myrrh,	837	" "

Making together some 90,000 pounds exclusive of various medicinal preparations, nostrums, &c., in small quantities, rejected from time to time, but not considered of sufficient importance to specially note. The sum total of the various drugs, medicines, &c., rejected by me since the day the law went into operation at this port (July 12, 1848) is some 710,000 pounds."

"I am happy to find that the Circular Instructions lately issued by the Secretary of the Treasury, explanatory of the spirit and intent of the Law regulating the importation of drugs, &c. meets with very general approval. They have long been needed, and will prove of great use and benefit to those who may be intrusted with the administration of said law. Whilst they will relieve the Special Examiners from much embarrassment, heretofore experienced for the want of some special standard by which to govern themselves, they must of necessity, if honestly adhered to, produce a perfect uniformity of action among that class of officers at the different ports of entry. It is possible that those who argue that everything 'good of its kind' in the way of drugs should pass the Custom House for consumption, may not particularly relish these high-toned standards. Egyptian Opium, Montpellier Scammony, French and English Rhubarb, Bastard Jalap, Jalap tops, spurious Cinchona Bark, furnishing on analysis none of the natural alkaloids, together with many other articles of so called drugs that could be mentioned, all good of their kind, would, I admit, find little favor with the Special Examiner acting under present instructions."

In speaking of the necessity of uniformity in the action of the several Examiners, Dr. Bailey complains of a practice in vogue by some importers, of entering goods at other ports *in bond*, where they are examined, and afterwards sending

them coastwise to New York, where, from having been previously examined, they cannot be stopped by the Special Examiner if he finds them unfit for medicinal purposes, because, according to the rules of the Department, the officers of one port cannot go behind the returns of those of another.

Dr. Bailey suggests that the Colleges of Pharmacy should "suggest to the Department" all necessary reforms touching any modifications or alterations in the law, as well as the practical operation of that wise and beneficial sanitory measure, in the enactment of which they took and bore so prominent a part.

Dr. Bailey concludes his letter by giving assurance of his readiness to co-operate in any movement to perfect the measure, hopes that the perpetrators of "home adulterations" will be looked after and exposed, and begs to tender his best wishes for the advancement of Pharmaceutical Science to the members of the Association.—EDITOR AMER. JOUR. PHARM.]

T. B. Merrick, of New York, offered the following:

Resolved, That the Association adopt the report of the Committee on the Inspection of Drugs as in the main representing our views. After debate,

On motion, the further consideration of this was postponed until the afternoon session.

On motion of Prof. Procter, the report of the Committee on Secret or Quack Medicines was now taken up and discussed. The report was referred to the Committee on Pharmaceutical Education, and on motion the Recording Secretary was added to that Committee.

Moved, That when we adjourn it be till half past 3 o'clock this afternoon. Adopted.

C. Augustus Smith called up the 6th proposition in the Executive Committee's report relating to prizes, and spoke, in connection therewith, of the great importance of the subject of the cultivation of indigenous plants therein referred to, and moved that the whole subject of offering prizes be referred to a Special Committee to report next year.

The Chair appointed on this Committee, C. A. Smith, *Chairman*, S. M. Zachrisson, and T. H. Barr.

[Mr. Smith, in connection with the subject of indigenous drugs, stated that in the neighborhood of Cincinnati more than 2000 acres were devoted to the culture of grapes, yielding 400 gallons of wine per acre; that this branch of production was rapidly extending; and from reliable data he could state that in ten years the annual crop of argols (Tartar,) would be at least 150,000 lbs.—EDITOR AMER. JOUR. PHARM.]

A resolution in reference to the trade in quack medicines was offered by Dr. Guthrie.

Pending the discussion of this, the meeting adjourned.

AFTERNOON SESSION.

President in the Chair.

The minutes of the morning session were read and approved.

Dr. Guthrie having, since the adjournment, modified his resolution under discussion at that time, obtained leave to offer it in the following form:

Resolved, That this Association recommend to each State the enactment of such a law as shall require every person engaged in the manufacture and sale of any patent or secret medicine, designed or recommended for exhibition as a remedial agent, to file in the proper office of each State wherein such remedy is offered for sale, a full and complete formula of such remedy, and that under oath; and, moreover, to require such manufacturer so offering goods for sale or agency or otherwise, to conform to such State laws as regulate the levying of tax or excise upon all who engage in the business of buying and selling merchandize.

[In support of his resolution Dr. Guthrie said that no great object was attained without an early and zealous effort. If we would accomplish anything, we must aim high. He was aware, from the discussion this morning, that almost every individual present was opposed to the resolution; and, while respecting their opinions, he felt compelled, as a member of the Association, to speak out plainly. He felt the opposition of the brethren, yet he knew he had the good of the Association at heart. From a small beginning, quackery had grown to a great monster, of which we are afraid. Was this right? Putting aside pecuniary considerations, he thought very few would uphold the system. He wanted *right* to be placed above *money*. The American Medical Association were afraid to touch it; they have repeatedly given it the go-by. At their last meeting in New York, they made great preparations for an attack upon it; but at the first flourish of the enemy's trumpets, the whole army were put to flight. Shall we be afraid of it? In the name of humanity let us do something. Let us meet the question manfully, and not hide our light under a bushel.

Dr. Guthrie combatted the suggestion that the law would not reach it. Quackery was not independent of the law, but under its control. If this resolution should pass, and its consideration be pressed upon the Legislatures, there is little doubt such a law as that asked for could be passed in several States, perhaps during the coming winter, and of its good effect he could have no doubt. In reference to the argument that such a law as that proposed would deprive every owner of a quack medicine of the exclusive right to prepare and sell it, he quoted the case of Rogers vs. Rogers, tried in one of the Ohio Courts, in which the owner of a quack preparation sued another party of the same name for imitating his label, the decision of the Court sustained the right of the original proprietor of the medicine to his trade mark which was his label, and gave judgment against the imitator. He admitted the difficulties of the subject, but argued that all great movements must be sustained through opposition and reproach. He concluded with a review of the history of this Association from its origin, and made a stirring appeal to its members to falter not in the great work to which they are called.

He was followed by Mr. Parrish, who deprecated the expenditure of much time upon the subject. He regretted the disposition to turn our energies in the direction of legislation, instead of looking mainly toward self-improvement and the general elevation of our profession. He did not think public sentiment was prepared for the abolition of quackery, however legislatures might be induced to pass stringent laws against it. He urged that in this county no law was effectual which was not sustained by public sentiment, and instanced the liquor law of Massachusetts, which is violated in Boston with such impunity; also the law of the State of New York requiring that apothecaries in New York city should be graduates in pharmacy, while a very small proportion are such; also a law of Maine, somewhat similar to that called for by the resolution, which is understood to be unavailing as a means of suppressing quackery. He sympathized with the high toned views of Dr. Guthrie on this subject, and had no disposition to discourage a consistent opposition to quackery, but regarded the subject as a very delicate one, in view of the involved condition of pharmacy. He had been reminded during Dr. Guthrie's remarks of the Scripture account of

David, who did not seek a contest with the great Goliah, till in the capacity of a shepherd of his father's flocks he had slain the lion and the bear. So with this Association, let it not seek to meet this great giant until it has gained strength in contests with ignorance and incompetence in its own profession. Let it at least get out of its swaddling clothes before we thrust it forth to meet this enemy, which has grown wilful and strong by long and successful exertion.—EDITOR AM. JOUR. PHARM.]

After further discussion the following was offered by Joseph Laidley:

To strike out all after the word "Resolved," and insert, "That the American Pharmaceutical Association, believe that the use and sale of secret or quack medicines is wrong in principle and is in practice attended with injurious effects to both the profession and the public at large, and believe it to be the duty of every conscientious druggist to discourage their use.

"Resolved, That this Association earnestly recommend to our pharmaceutical brethren to discourage by every honorable means the use of these nostrums; to refrain from recommending them to their customers; not to use any means of bringing them into public notice; not to manufacture or to have manufactured any medicine the composition of which is not made public; and to use every opportunity of exposing the evils attending their use, and the false means which are employed to induce their consumption."

The question being divided, the motion to strike out all after "Resolved," was put by the Chair, and carried by a vote of 13 to 8.

The Resolutions being then put to vote were adopted by a vote of 13 to 5.

The subject of the Inspection of Drugs being now called up, the resolution offered by T. B. Merrick in the morning session, and postponed, was withdrawn.

H. F. Fish now offered the following:

Resolved, That in the opinion of this Association, all varieties of drugs that are good of their kind should be admitted by the Special Examiner.

This was discussed at length by Messrs. Merrick, Coggeshall, Guthrie, Fish, Geyer, Ellis, and Procter.

[The following notes of the discussion which occurred previously to the vote on the above resolution, are introduced because as the yeas and nays were called for and are recorded, the views on each side should be given in justice to the speakers. They are derived partly from the published notices of the discussion in the Boston Traveller, and partly from notes taken by the Editor of this Journal.

Mr. Merrick, of New York, commenced the debate by asking whether the Law for the Special Examination of drugs is a good one? and urged the following objections to it: It is in conflict with the liberty we all ought to enjoy in business. The difference in the success of different druggists, depend mainly upon the reputation, good or bad, which they acquire by their knowledge, skill and probity in the selection and sale of drugs and medicines, or by the inferiority of their stocks of drugs, which results from a want of these qualities. He considered the tendency of this law was in good measure to deprive druggists of the advantages resulting from this competition. He regarded all laws of this kind to be checks to human progress. He further objected to the Drug Law on the ground that after a trial

of three or four years, it has not been found to work well. The office of Special Examiner is placed in the hands of persons unfitted by education and previous pursuits to execute so important a trust. He urged that physicians were less qualified than practical druggists for the station. They were not educated for that purpose. They often could not tell good from bad jalap. The office had become too political—a bad feature—and a good argument against the law. He reviewed the late instructions from the Treasury Department to the Special Examiners and pointed out its defects. He would rather trust to his eye-sight to tell the quality of many articles, such as aloes, senna, rhubarb, &c., than any estimate founded on the standards given. The specific gravity of the Essential oils is no criterion of their purity in a majority of cases. The idea that the value of Peruvian barks depended solely upon the amount of alkaloids they contain was combatted, and the doctrine maintained that all medicinal barks have their peculiar uses, and all should be allowed to enter our ports if *good of their kind*.

Mr. Colcord, of Boston, was pleased with many points in the report of the Committee, but was not prepared to adopt it as a whole. The resolution under consideration was embraced in the report, but he could not vote for it. In illustration he said that he liked mackerel if No. 1, and good of its kind, but he would as soon eat No. 3 mackerel as to vote for this resolution.

Mr. Fish, of Connecticut, observed that he also liked No. 1 mackerel, but he had eaten No. 3, and was willing to allow any one the same privilege, even though it might not be considered good of its kind. In reference to Cinchona bark he wished to say that during an experience of 26 years in the drug trade he had found Maracaibo bark to meet the wants of a great majority of the people in his section of the country. During the prevalence of the spotted fever as an epidemic in the valley of the Connecticut, in the years 1803, '4, and '12 and '13 the medical profession relied entirely upon that bark, and fought successfully that dire disease with it; and it was not until a later period that any of the officinal barks came into use, which were of course found preferable. That bark still holds its place, and forms nine-tenths of the consumption of the people, and is in a majority of cases preferred. He regarded a strict construction of the law, in the manner advocated by the opponents of this resolution, as an actual prohibition of many valuable remedies. Under it nitrate of potassa was inadmissible, as well as any bark non-oficinal. He coincided with Mr. Merrick in his views regarding the law, and now desired to pursue such a course, as to render its operation less objectionable.

Mr. Fish believed the intent of the law was simply to exclude *adulterated or deteriorated* drugs, but was not applicable to any article in its natural state that possessed remedial powers. He conceived that the Examiners had asumed judicial powers, and undertaken to decide upon what should and what should not be admitted, without regard to quality, upon grounds wholly inapplicable, as had been illustrated recently in Philadelphia. He did not believe that a bark to possess remedial powers (as a febrifuge) should of necessity contain quinine.—The false Augustura (Strychnos-pseudo quina) was the most valuable antiperiodic known, but contained not a particle of that alkaloid. In conclusion, Mr. Fish regarded the present operation of the law as retrograding rather than advancing, and earnestly hoped that a more liberal spirit would finally prevail.

Dr. Guthrie replied to the arguments urged for the adoption of this clause of the report; reviewing the causes which led to the enactment of the law of 1818; giving a sketch of the state of the drug trade in the West and South before that law, and its present condition. He urged that the Association should take a high and consistent stand in this matter as having an important bearing on its future usefulness to the profession of Pharmacy in the United States, and upon the medical profession, as well as its importance to the community at large. He urged that the American Pharmaceutical Association stand as the representatives of the body of Pharmaceutists and Druggists, and that these as curators and conservators of the public health are looked to by the community, that every article dispensed by them be not only "good of its kind," but that the kind be good, and not only good but the best. Medicines are at best hard to take, and we should offer such only as will produce the desired effect in the smallest amount.

Dr. Guthrie argued that the instructions of the Secretary of the Treasury were on this subject sufficient. He regretted that the executorship of the law should be made a political appointment, as it was calculated eventually to destroy the whole force and effect of the law, from the frequent changes of officers, the execution of whose duty requires great experience and a minute acquaintance with drugs in general;—and urged that the Association should protest against such changes unless called for by prominent and experienced druggists. Dr. Guthrie related many instances that had fallen under his observation while collecting information, as to the practical effects of this law, under the instructions of the late Secretary of the Treasury, Mr. Corwin, going to show the beneficial effects of the law, and gave it as his opinion that great good had resulted therefrom, not only in its immediate effects in keeping out of the market inferior drugs, but in begetting an inquiry and increasing demand for good drugs. He also urged the subject of home adulteration as having been greatly checked by the action of the law, and closed by an earnest appeal to his brethren of the Pharmaceutical profession to stand firm and unfaltering, on the clear ground of right, regardless of any outside pressure, come that pressure from what source it may.

Mr. Coggeshall said he would be glad to have a decision upon this vexed and tedious question—a decision now, by this body—that so far as its influence extends it may be settled at once and forever. This is the third time that this question has come before meetings of this kind, the Conventions of 1851 and '52, and now the Pharmaceutical Association;—it had twice been earnestly debated at much length, its claims each time fully and fairly considered, and it has twice been rejected by an emphatic vote. Is there consistency in bringing up this matter year by year in the very same words? There seemed a strange determination to force, if possible, a declaration by this body, of a principle as vague in its terms, as it would be mischievous in the latitude which would be claimed under it if adopted by authority. His colleague, Mr. Merrick, had said that there should be no obstruction to trade, that every man should be at liberty to sell good or bad articles as he thought proper; his ideas of what would best promote his success being his governing principle. He (Mr. Coggeshall) would not be so indulgent to any man who had no other principle in selling drugs than a pecuniary one—he would not allow a man to sell false and spurious drugs to the ignorant and unfortunate who might trust life, or hopes of restoration to health, upon their proper action—he would not allow false drugs to be trafficked in at all, and would not compromise with such iniquity.

In regard to the standards, he was very well satisfied with those contained in the instructions lately issued by the Secretary of the Treasury, as far as they go, and it is remarkable how well the ground is covered by them. The principal object of pressing this loose proposition appeared to be to remove obstructions to the influx of spurious (so called) Peruvian barks and European Rhubarb, if good of their kind, that is to say not worm-eaten, water-soaked, or decayed, but bright and of good appearance, though good for nothing as articles of medicine. He considered the present barks, or the great bulk of them, imported under the names Carthagena and Maracaibo, as altogether different from, and inferior to those of twenty-five and thirty years ago, when they were subjected to the examination reported in the foot note of the United States Dispensatory. As to Mr. Fish's argument that the people of Connecticut had used these barks and were satisfied with them, why, they used them because they did'nt know any better, and he was astonished that his friend should live there and not teach them to be wiser.

Mr. Coggeshall regarded European Rhubarb as not a legitimate article of medicine, but as used wholly as an adulteration of Russian or Chinese, or as a substitute in whole or in part for them—the true article of Russian Rhubarb being literally unknown out of the principal cities. In illustration of this fact he mentioned having wanted some Turkey Rhubarb when in a town some hundred miles from New York, and called upon a druggist, who produced a large jar of what he remarked was "very handsome," but which was pronounced at once to be not genuine, to the surprise and no small indignation of the druggist, who among other arguments in defense of his drug, stated that he had bought it of a first class house in New York, and had paid $2.25 per pound for it! Mr. Coggeshall be-

lieved from subsequent enquiry that this was too generally the case throughout the country.

Mr. Procter, of Philadelphia, took the ground that all legitimate medicinal substances good of their kind should be admitted, (defining the term *good* to mean the standard of quality adopted by general authority,) and that where articles were imported solely for purposes of adulteration, as has been alleged, their exclusion might be effected by special action of the proper authority and not left to the opinion of the Examiner. Much had been said about the worthlessness of the Cinchona barks from Northern South America. However true this character may have been formerly, or even now in regard to some varieties of that kind of barks, it is an ascertained fact that since the monopoly of Bolivian Cinchona the agents of merchants and manufacturers in Europe had searched the New Grenadian Andes and had discovered other varieties of Cinchona bark of such superior quality as to render them profitable for the manufacture of sulphate of quinia. Quite recently bark of this kind was refused admittance because it it was not officinal! He had seen some of these barks in Philadelphia, that had yielded from one and a half to nearly three per cent of crystallized sulphate of quinia; their appearance sometimes was by no means in their favor, often much broken up, and so as to readily give an idea of inferiority, whilst in other cases they were in handsome pieces. Now, adopting the standard of the late Treasury circular, (viz: 1 per cent of quinia or two per cent of alkaloids) these barks are not only good, but very good varieties of their kind, and should be as they now are admitted, whilst the inferior varieties of these barks, and other barks falsely sold as Cinchona, should be excluded.

In relation to Banbury Rhubarb, which is certainly the best variety of the European kind, if, as has been so positively asserted by Mr. Coggeshall, it is solely used in this country for adulteration or as a sophistication, let it be excluded, because as yet no legitimate demand for it has been made by physicians—they do not know it—and the supply of both kinds of Asiatic Rhubarb, which is more active, and better understood, is ample. If, however, a legitimate demand for this or any other article peculiar to Europe should arise, from the influx of European practitioners, they certainly should be allowed to pass the Custom House if good of their kind, even if they are sometimes used for purposes of adulteration.

Previous to taking the final vote, Mr. Procter remarked, that last year he had voted against a resolution similar to that now before the meeting, but that since then he had had occasion to investigate the subject in its various bearings, and was convinced that it was the true ground to act upon in admitting all legitimate medicinal substances.

Mr. Ellis availed himself of the opportunity, before taking the vote, of making some remarks upon the subject before the Association—as the debate had already taken a wide range, and remarks had been made that might lead to the impression that there existed a disposition on the part of many members of the body to relax in some degree their efforts to sustain the law of Congress in relation to imported drugs. Such, he felt satisfied, was not the case—all were aiming at the same object—to use our utmost endeavors to discountenance the use of inferior and sophisticated drugs.

It was due to himself and his friends who might vote for the resolution authorizing the introduction of all drugs that were good, or superior, of their kind, to disclaim all idea of diminishing the conservative features of the law. A great deal had been said against the introduction of a class of barks from the Atlantic coast of South America. These barks, it was well-known, contained appreciable quantities of the Cinchona alkaloids, and sufficient quinia to make it an object to manufacture the sulphate from them. He would state for the information of the Association that a lot of sulphate of quinia recently imported into Philadelphia, had been rejected on the ground of its not being manufactured from Calisaya bark. It was from the highly respectable house of Howards & Kent, near London, and he had understood that these gentlemen were mortified to hear that sulphate of quinia manufactured by them, had been refused admittance into an American Port. They admit, of course, that they use Bogota and Maracaibo

barks in their manufacture of this important article, but because they use these barks, to the admission of which so much opposition has been manifested at some of our ports of entry, it does not follow that their quinia would be less pure or efficient as a remedial agent than if made from yellow bark.

The facts of the case appear to be—that in the use of calisaya bark less time is consumed and the product is larger;—the cheaper barks require a more tedious process to elaborate what quinia they contain, and are not used when the manufacturers are pressed for time. In the instance of the particular invoice of quinine alluded to, it was understood from the manufacturers to have been made from the first quality of the officinal bark:—a statement corroborated by two separate analyses, showing the salt to be pure sulphate of quinine.

It must be apparent from the immense and increasing demand for this valuable remedy, that other sources of supply of bark must be sought besides the western coast of South America, or the price of the salt would limit its consumption.

Mr. Ellis considered, therefore, in voting for the passage of this resolution, and thus declaring as the sense of this Association that "medicines good of their kind should be admitted," we are but carrying out the views of the recent Treasury circular on this point.

Pending this discussion the Committee on Credentials introduced for membership the names of Geo. S. Dearborn, Great Falls, N. Hampshire; and James S. Melvin, Henry D. Fowle, Peter J. Hazzard, W. W. Goodwin, of Boston, Massachusetts.

The following being present signed the Constitution and paid the fee, Geo. L Dearborn, James S. Melvin, and Henry D. Fowle.

On motion the vote on the resolution was directed to be taken by yeas and nays, and was as follows:

YEAS.—Cummings, Dearborn, Brewer, Fish, Merrick, Ellis, Parrish, Procter, Duval, Zachrisson, Barr.—11.

NAYS.—Peck, Henchman, Restieaux, Colcord, Turner, Lincoln, Souther, Geyer, Dupuy, Coggeshall, Laidley, Smith, Chapman, Guthrie, Melvin, Fowle.—16.

On motion, Thomas Hollis, of Boston, was excused from voting.

On motion, adjourned till half past 9 o'clock to-morrow morning.

THIRD-DAY.—MORNING SESSION.

The President in the Chair.

The minutes of the last session were read and approved.

The subject under consideration at the time of adjournment being resumed, the following resolution was offered by the Secretary:

Resolved, that the two lists of Materia Medica and preparations, prepared by the Committee [on the Inspection of Drugs,] and presented in their report, with a view to classifying them and fixing standards upon those which are capable of it, together with the subject of the appropriate tests for detecting adulterations when practicable, be referred to a special committee to report next year.

Prof. Procter proposed the following amendment, which was accepted by the mover: to add after the word "committee"—the words "who shall be authorized to invite the co-operation of the several Colleges of Pharmacy."

The Resolution as amended was then adopted. The number of the Committee was fixed at 2, and Wm. Procter, Jr., and G. D. Coggeshall were appointed by vote of the Association.

C. B. Guthrie moved to refer the remaining part of the report on the Inspection of Drugs, to the Committee just appointed, which was, after discussion, withdrawn.

H. F. Fish proposed the following:

Resolved, That the late Circular of Instructions, from the treasury department, is in our opinion a useful one, although, in many of its provisions defective, and, as regards many articles, calculated to substitute ineffectual modes of determining quality for a sound and intelligent judgment founded on their physical characters, and that this circular be referred to the Committee appointed on the list reported by the Committee.

C. B. Guthrie proposed to strike out all after "department" and add—"be referred to the Committee of Two, just appointed to be reported upon, with such amendments as they deem requisite, at our next annual meeting."

The amendment and resolution as amended were adopted.

The following resolution, [embodying an opinion of the Committee on the Inspection of Drugs,] was offered, and after much discussion decided negatively:

Resolved, That we believe the Drug Law was never designed to exclude foreign secret or quack medicines through the Custom House, nor do we believe this justifiable however *desirable.*

The following resolution offered by William B. Chapman of Cincinnati, was adopted:

Resolved, That the next annual session of this Association be held in Cincinnati, Ohio, at such time as may be fixed upon by the Association.

Charles T. Carney, of Lowell, Mass., being recommended by the Committee on Credentials, complied with the rules, and was constituted a member.

Professor Procter offered the following which was unanimously adopted.

Resolved, That this Association have heard, with unfeigned regret, of the death of Jonathan Pereira, M. D., of London; and, as one of the most distinguished and able Pharmacologists of his age, we esteem his death a serious loss to the cause of Pharmaceutical and Medical Science.

Jos. Laidley offered a resolution, which was amended with his consent so as to read:

Resolved, That the next annual meeting of this Association shall be held on the last Tuesday in July, 1854, at 11 o'clock, A. M.

It was unanimously adopted.

Wm. W. Goodwin, and Peter J. Hazzard, were now constituted

members by signing the Constitution and paying the annual contribution.

The Committee on Credentials reported for membership J. B. Lane, of Fitchburg, and A. S. Jones, of Newburyport, Mass., and they also being present, complied with the requirements of the Constitution.

Joseph Laidley offered the following:

Resolved, That a Committee of three be appointed to consider the feasibility of forming a benevolent fund for the relief of such members of this Association as may need its aid; and if they consider it feasible, that they recommend such means for raising, and rules for governing, the proposed fund, as they may deem suitable, and report to the next annual meeting.

A motion to lay on the table was decided in the negative, and the resolution was lost.

The Report of the Committee on the Sale of Poisons, being now taken up, the recommendations of the Committee were embodied in the form of resolutions by its Chairman. A motion was made to lay them on the table, and lost. They were discussed by several members.

An amendment proposed by C A. Smith, to substitute the word *arsenic* for *popular poisons*, was adopted.

Thomas Restieaux, of Boston, moved they be indefinitely postponed. It was not agreed to.

The question on the resolutions being taken, they were adopted, as follows:

Resolved, That this Association, in view of the loose manner in which the sale of arsenic is conducted in this country, earnestly recommend to the pharmaceutical bodies, where these exist, and to druggists and pharmaceutists in general in other places, that the several Legislatures in those States where no law on the subject exists, be petitioned to pass laws confining the sale of this poison to apothecaries, druggists, and physicians, or to such other persons as shall be specially licensed by law, who shall be required to keep a record of such sales. That such sales shall not be made to minors or servants unless they be properly authorized by a written order from a responsible person. That all packages or bottles shall be distinctly labelled with the name of the poison, and the word POISON prominently marked on it; and finally, that any sale of arsenic followed by accident, in which these precautions have been neglected, be considered a misdemeanor punishable by legal process."

C. B. Guthrie offered the following, which was adopted:

Resolved, That the Executive Committee be requested to publish and circulate a circular address to druggists and apothecaries, announcing the time of our next meeting, the objects of the Asso-

ciation, terms of membership, and such other information as they deem requisite to ensure a full attendance upon its sittings.

Thomas Farrington was now constituted a member, by signing the Constitution, his contribution having been previously paid.

The following communication was introduced by the Corresponding Secretary of last year, and, on motion of C. B. Guthrie, referred to the present Corresponding Secretary to reply thereto.

To Prof. William Procter, Jr., Corresponding Secretary, &c.

Dear Sir: At the third annual meeting of the Illinois State Medical Society, held at Chicago, June 7th to 10th, 1853, the undersigned was appointed a Committee to transmit to the National Pharmaceutical Convention the following resolutions reported by the Committee on Drugs and Medicines, and unanimously adopted by the Society.

Resolved, That the Illinois State Medical Society have learned with much pleasure of the institution of the National Pharmaceutical Society, and would hereby express a desire and intention, as far as may be, to co-operate with the laudable exertions of that body in "the advancement of pharmaceutical knowledge, and the elevation of the professional character of apothecaries and druggists in the United States."

Resolved, That this Society earnestly recommend to the druggists and apothecaries in Illinois, that, as far as circumstances will admit, they form among themselves pharmaceutical societies to enable them to act in the most efficient manner as adjuvants to the National Pharmaceutical Association, in the work of elevation and reform of their profession.

Resolved, That this Society adopt cordially the following two "resolutions" of the National Pharmaceutical Convention, held at Philadelphia, October 6th, 1852, viz: "Resolved, That in the opinion of this Convention, the law against the importation of adulterated drugs, chemicals, and medicinal preparations has already effected much good by excluding large quantities of inferior drugs from the market. Resolved, That, inasmuch as the usefulness of the law will be proportional to the ability and conscientious discharge of duty in Examiners, that this convention shall respectfully and earnestly represent to the appointing power the cardinal importance of preventing the removal of qualified Examiners on mere political grounds."

Resolved, That a Committee of one be appointed by the chair to correspond with the National Pharmaceutical Association, and co-operate with that body in carrying into effect the spirit of the last quoted resolution.

The undersigned was appointed the Committee under the last resolution, and would respectfully express his readiness to co-operate with the Association in any manner they may suggest as most expedient to effect the object referred to. Please present the above to the Association, if it should reach you in time, and believe me

Yours very truly,

[Signed] James V. Z. Blaney.

Vice President George D. Coggeshall in the chair.

The following resolution was offered by H. T. Cummings:

Resolved, That the Executive Committee be instructed to publish a large edition of the proceedings of this Convention, including the reports and all the accompanying documents; distribute it extensively over the country at the expense of the Association, and file in

the hands of each of the Colleges and Associations here represented a sufficient number of copies for preservation and future use.

This was put to vote, and lost.

A motion was made directing it to be left to the discretion of the Executive Committee, what papers introduced in connection with the proceedings shall be published. This was lost.

It was on motion resolved to take up the various reports and documents on file, with a view to determine whether they shall or shall not be published.

The report of the Executive Committee was on motion referred for publication. The statistical reports introduced by that Committee were referred to the Executive Committee of this year to publish so much as may seem to them best.

A motion that the report of the Committee on the Inspection of Drugs, without the list accompanying it, should be referred for publication, was lost.

On motion it was Resolved, that so much of Dr. Bailey's letter as relates to statistical information with regard to the importation of drugs, be published.

On motion it was Resolved, that Dr. James V. Z. Blaney's letter be published.

On motion, the report on the Sale of Poisons was referred for publication.

On motion it was Resolved, that the samples of medicinal herbs of home growth, prepared for the Massachusetts College of Pharmacy, and by them exhibited to this Association, indicates an improvement in the preparation of this class of medicines, highly commendable.

[The specimens alluded to in this resolution, were grown and dried by Mr. T. S. Atherton, of the United Society of Harvard, Massachusetts. The leaves, such as digitalis, henbane, etc., were deprived of the cruder parts, broken up, and enclosed in corked quart bottles, without being pressed in cakes. This plan of getting up medicinal plants, especially those of an odorous or fugitive character, is very commendable, and when well done will render them much less changeable by keeping.—Editor Am. Jour. Ph.]

The President resumed the chair.

The following was offered by C. A. Smith, and unanimously adopted:

Resolved, That our Committee on Pharmaceutical Education be requested to report at our next annual meeting on the expediency of endeavoring to obtain such Congressional action as would compel all Special Examiners of drugs and medicines to be either graduates of pharmacy, or to receive a certificate of qualification for such office from some College of Pharmacy recognised as such by this Association.

A letter received through George D. Coggeshall from John Meakim, of New York, on the subject of local formulæ, was read; and

on motion of Joseph Laidley, the following resolution in relation thereto was adopted:

Resolved, That the letter of Mr. Meakim, in reference to securing uniformity in the preparation of unofficinal compounds be referred to the Executive Committee, with instructions to request the forwarding to them of such local formulæ as pharmaceutists may wish to communicate.

[It may be stated in explanation of this resolution, that Mr. Meakim's proposition has reference to those extemporaneous formulæ, and perhaps some permanent preparations, which are more especially known and prescribed in certain localities than in others, and which when prescribed in other places by stranger physicians, are either not understood or liable to be misinterpreted. The object of the resolution is to collect these through the agency of the Executive Committee, have them digested into a formulary, and published either in the Proceedings, the Journals, or in some other way.—EDITOR.]

H. F. Fish moved the following, which was unanimously adopted:

Resolved, That the thanks of the Association be presented to the President and Secretary, for the able and impartial manner in which they have discharged the duties of their offices.

Professor Procter moved the following which was unanimously adopted:

Resolved, That those members of the Association who are strangers in Boston, do express their warm sense of the kindness and courteous treatment they have received from the members of the Massachusetts College of Pharmacy.

On motion, it was voted that the Recording Secretary be instructed to have the book containing the Constitution and Code of Ethics, and the signatures thereto, enlarged, fully bound, and lettered.

The following gentlemen were elected Correspondents agreeably to *section* 2, *article* 6, of the Constitution, for one year, viz:

MAINE.
S. W. Blanchard, M.D., Yarmouth,
Frederick Robie, M.D., Biddeford,
S. R. Byram, Eastport.

NEW HAMPSHIRE.
Geo. L. Dearborn, Great Falls.

NEW YORK.
A. J. Mathews, Buffalo,
Wm. Bristol, Utica.

NEW JERSEY.
Wm. J. Allinson, Burlington,
P. V. Coppuck, Mount Holly,
J. D. James, Trenton.

DISTRICT OF COLUMBIA.
Dr. R. S. Patterson, Washington.

NORTH CAROLINA.
S. J. Hinsdale, Fayette.

SOUTH CAROLINA.
W. L. Cleveland, Charleston.

PENNSYLVANIA.
L. Wilcox, Jr., Pittsburg,
Wm. G. Baker, Lancaster,
F. R. Smith, M. D., Bellefonte,
H. P. Swartz, Alleghany City.

MARYLAND.
A. J. Lowndes, Baltimore.

VIRGINIA.
Jas. B. Campbell, Portsmouth,
James Baker, Wheeling,
R. H. Stabler, M.D., Alexandria,
Jas. Cooke, M.D., Fredericksburg,
C. A. Santos, Norfolk.

LOUISIANA.
J. H. Tilghman, New Orleans.
A. E. Richards, Plaquemin.

TENNESSEE.
Dr. R. O. Currey, Nashville,
Mr. Strong, Knoxville.

GEORGIA.
R. Battey, Rome,
W. W. Lincoln, Savannah,
D. B. Plumb, Augusta.

FLORIDA.
E. Barnard, Jr., Tallahassee.

ALABAMA.
Mr. Gates, Mobile,
Mr. Theiss, Montgomery.

MISSISSIPPI.
Dr. Emanuel, Vicksburg,
C. A. Moore, Jackson.

KENTUCKY.
George R. Miller, Louisville,
J. Morton Morris, Louisville,
Mr. Barkers, Georgetown.

MISSOURI.
G. T. Chamberlain, St. Louis.

ILLINOIS.
Mr. Reed, Chicago.

INDIANA.
Robert Browning, Indianapolis,
John T. Plummer, M.D., Richmond,
John T. Wall, M.D., Terre Haute.

CALIFORNIA.
G. L. Simmons, Sacramento.

On motion of T. Restieaux, the vote approving the minutes of yesterday was reconsidered, and the Secretary allowed to make an alteration in the minutes of the morning session, which alteration was adopted.

The entire minutes were finally read, and by vote adopted.

The Convention, at about 3 o'clock, finally adjourned to meet in Cincinnati, Ohio, on the last Tuesday in July, 1854, at 11 o'clock A. M.

(Signed) EDWARD PARRISH,
Recording Secretary.

[NOTE.—It is proper to state that the notice of Mr. Taylor's Report on drug inspection, of Dr. Bailey's letter, and of the discussions on the report on quack medicines, and on the drug law, have been introduced here, solely on the Editor's authority, the Association not being responsible. The Editor has made these additions to render the minutes more intelligible as regards the action of the Association on the Report of Mr. Taylor, and to exhibit a few of the reasons given by the speakers. The notes taken during the debates, embrace only a part, and the exact language of the speakers has not been strictly adhered to, yet the ideas and general expression we believe is retained. The documents referred to in the Executive Committee's report at page 5 are not now published; a part of them may be in a future number. An apology may be looked for from our readers for the great extent of this notice. Our only reasons are that this is the last number of the volume, and that a full notice of the meetings should be permanently recorded.—EDITOR AMER. JOUR. PHARM.]

EXPERIMENTS WITH SULPHINDIGOTIC ACID, AND OZONOUS ATMOSPHERES.

By DR. JOHN T. PLUMMER, Richmond, Indiana.

Since my communication to this journal on the *decolorizing properties of the essential oils*, &c., I have made the following observations and experiments:

1. A small quantity of *rancid lard* heated, but not boiled, with solution of sulphindigotic acid, readily discharges all color from the liquid.

2. Some paper was prepared with a solution of iodide of potassium in starch water, and a slip of it suspended in the *atmosphere* of a nearly empty jar of *rancid lard.* In a short time the iodine began to be eliminated, and the paper ultimately became black.

4. Another slip of the prepared paper was inserted into a bottle from which had been emptied a small quantity of *oil of amber;* in this case also the *atmosphere* in the vessel blackened the paper.

4. An *atmosphere* of *oil of lemons* and other *essential oils* likewise decomposed the iodide of potassium, and rendered the paper black.

5. An eight ounce glass jar, with a thin stratum of water in it, and a few bits of phosphorus half-covered with the water, and a strip of the iodized paper suspended in it, with another slip of blue litmus paper by its side, was left with only a glass plate over it, until all the white clouds of phosphorus acid were absorbed by the water below, and the air in the jar left perfectly clear. During the formation of the phosphorous acid no change took place in the color of the moistened litmus paper, nor the moistened iodized paper. When, however, the phosphorous acid was absorbed as mentioned, the litmus paper became slowly bleached, and the iodized paper blackened.

So indisposed was the ozonized atmosphere to escape, that I lifted off the glass plate and inserted a fresh strip of iodized paper into the jar, and the paper was instantly blackened. I again removed the lid, and lowered a bit of lighted candle into the jar; the flame was immediately extinguished, and every vestige of ignition in the wick was gone.

6. Neither the confined *atmosphere* of *tincture of assafetida,* nor of *tincture of galbanum* affects the iodized paper, even after thirty hours exposure. The atmosphere of the gum resins themselves produced no discoloration of the paper.

7. *Tincture of galbanum,* shaken up with the indigo solution, readily bleached it. *Tincture of assafetida,* unlike the tincture of galbanum, instead of making a durable milky mixture, speedily parted with its gum resin, in such a manner as to leave the liquid almost entirely transparent, but of a pale blue color. Exposure to the direct rays of sun-light, for less than one hour, wholly bleached the fluid and rendered it completely limpid, the precipitated gum-resin floating on the top and adhering to the sides of the test tube.

Crumbs of the gum resin boiled with the indigo solution yielded a pale blue milky mixture, which by exposure to the sun's rays soon became white, but remained milky.

8. It is stated in the U. S. Dispensatory that tincture of galbanum becomes milky on the addition of water, but yields no precipitate. This is true for a certain length of time, but after fifteen or twenty hours a perceptible deposit is apparent. The action of the indigo solution was much more obvious in this way, for in an hour after the addition there was a well defined precipitate, which left the liquid semi-transparent.

9. I boiled some crumbs of galbanum in water, in a Florence flask, until the peculiar odor of the gum resin was diffused through the laboratory and adjoining rooms. The mouth of the flask was loosely corked, and during the whole of the ebullition a strip of iodized paper was kept suspended in the vessel. No discoloration of the paper appeared even after an hour's exposure to the vapor, nor in twenty-eight hours after cooling.

10. Slips of iodized paper were suspended in the bottles containing more or less of the following oils, and other substances. The times at which decomposition of the iodide took place are attached to the respective oils:

Oil of Lemon, blue in five minutes, black in ten minutes.

Oil of Cinnamon, slightly colored in four minutes, blue in twelve minutes.

Oil of Lavender, pale red in ten minutes.

Oil of Fir, Turpentine, Tansey, and Cubebs, slightly brown in ten minutes.

Oil of Amber and Rosemary, light purple in fifteen minutes.

Oil of Croton, pink in 23 minutes.

Oil of Peppermint, light brown in twenty-five minutes.

Oil of Savine, slight tinge in thirty minutes.

Oil of Caraway, Wintergreen, Sassafras, Fennel, Cloves, Spearmint, Bergamot, and Wormseed, (Baltimore)—no change in an hour, but after two to thirteen hours the paper was colored in the sassafras, wormseed, &c., bottles.

Tincture of Castor, and Camphor—no effect.

11. A broad slip of paper was prepared with the solution of iodide of potassium in starch, thoroughly dried, and the names of various volatile and fixed oils, and some tinctures, written on it,

at some distance from each other. Opposite these names the respective liquids were applied, by letting a drop fall upon the appropriate spot.

The periods at which the iodine was eliminated, as determined by the earliest discoloration of the paper, were as follows:

Oil of Lemons, two seconds.

Oil of Tansey, half a minute.

Oil of Turpentine and Juniper, three-fourths of a minute.

Oil of Wintergreen, Sassafras, Bergamot, and Anise, one minute.

Oil of Croton, one and a quarter minutes.

Oil of Origanum, tincture of Galbanum, and Assafetida, one and a half minutes.

Oil of Amber, Peppermint, Fennel, Lavender, and Caraway, two minutes.

Oil of Spearmint, three minutes.

Oil of Cinnamon, four minutes.

During this experiment an interesting result developed itself. *Every liquid applied to the paper produced so peculiar a shade of brown as to be quite characteristic.* Oil of cinnamon yielded a lemon-brown, with a darker margin; oil of fennel a uniform scorched-paper brown, with no difference at the margin. Other oils produced a very dark brown, and some a very pale brown color, yet all differed from each other, either by reflected or transmitted light, or in the character of the margins. Tincture of galbanum gave a pale violet tinge to the light brown base, with a much darker border; tincture of assafetida yielded a strikingly different spot from this.

On a review of the foregoing experiments, it will be perceived that, according to experiments 6, 9, 10,

1. All the odorous substances do not produce active ozonous atmospheres. That

2. Oil of sassafras and oil of wintergreen, which, according to my former communication already referred to, very tardily discharged the color of sulphindigotic acid; and, according to experiment 10 in the present paper, made no impression upon the iodized slips, when these were exposed to their atmospheres, were among the most active agents (exp. 11) in decomposing the iodide, when applied in substance to the prepared paper. That

3. The oils whose atmospheres do act upon the iodized paper, act with widely different degrees of facility, (Exp. 6, 9, and 10.)

4. Oil of lemon transcends all the other oils for promptitude of action, whether on sulphindigotic acid, or on the prepared paper, by atmosphere or by contact.

5. Oil of cinnamon acts with equal ease by its atmosphere as by contact; oil of lemon sixty times more slowly by its atmosphere than by contact; oil of lavender five times more slowly; oil of turpentine thirteen times; of amber seven times; of croton nineteen times; of peppermint twelve times; others from 30 to 120 and more times more slowly by their atmospheric than by contact agency.

6 The atmospheres in the bottles are not pure ozonous atmospheres, but are modified by the odoriferous portions of the oils.

7. The color of the stains produced on the paper by the atmospheres of the oils, and by the oils themselves, are so similar in several cases, as to lead to the conclusion that the volatile oils themselves are the sole agents in both cases, the vapors of the oils being condensed upon the paper in the case of the atmospheres.

I have used the term *ozonous* in the preceding pages more in reference to the suggestion of the editor of this journal, in a note to my previous communication, and for its temporary convenience, than from any satisfactory evidence that I have been able to verify the conjecture. It is true, there is much in the experiments to tempt one to the conclusion that ozone was the immediate cause of the several effects corresponding with the action of that body; but when we consider that other substances, which we admit act by their own specific powers, produce like effects in like relations, it renders the correctness of the conjecture rather problematical.

Thus No. 5 acts upon the prepared paper, and upon solution of sulphindigotic acid, as the oils do; both its vapor and its liquid decompose the iodide, and bleach the indigo solution. Why may we not attribute the like effects of the essential oils to a *peculiar* action of each? There are various experiments by which, perhaps, the question might be decided; such, for instance, as washing an atmosphere of some of the oils, or otherwise removing the influence of every agency beside ozone, (if it exist) and then testing; but I have not had time to prosecute the enquiry beyond what I have already recorded.

EXTRACT OF CAPSICUM.

By W. C. Bakes.

At the request of a physician of this city, I have been induced to prepare the above extract. Although the Pharmacopœia recognises the Infusum Capsici, and also the Tinctura Capsici, yet it is not always convenient to administer a medicine in the form of a liquid; therefore an extract was thought of, as being perhaps the most convenient to the medical profession. After some experiments. I have found the following formula the most satisfactory:

Take of Powdered Capsicum,	8 ounces.
Dilute Alcohol,	1½ pint.

Moisten the capsicum with a sufficient quantity of the dilute alcohol, and set the mixture aside in a close vessel, to macerate, for six days; then place it in a percolator and pour dilute alcohol on it until four pints have been obtained; and evaporate by means of a water bath to the consistence of an extract. I have found eight ounces of the powder to yield two ounces of extract. It is very powerful; and when a small quantity is placed on the tongue, it produces an insupportable burning sensation immediately; and, if left too long, will act as an epispastic. It has been used with success combined with quinine, in cases of intermittent fever, occasioned by the too frequent use of ardent spirits. An ointment made in the following manner:

Take of Extract Capsicum,	1 drachm,
Simple Cerate,	1 ounce,

was found to act as a rubefacient in less than twenty minutes. It may be used with success where a simple rubefacient is required.

SPONTANEOUS GENERATION OF PRUSSIC ACID IN A MEDICAL COMPOUND.

By John T. Plummer, M. D., of Richmond, Indiana.

I do not know that the attention of the medical profession has heretofore been called to the fact that alkaline combinations with organic matters, at least sometimes generate *hydrocyanic acid.*

Nor did it present itself to my own mind until recently. I think it should claim the notice of those who are interested in the treatment of disease, as well as of those who are engaged in pharmaceutic chemistry.

The short train of events leading to the development of this fact was as follows:

A young physician applied to me on account of an attack of sickness the day before, for which he could assign no satisfactory reason. He said that while he was engaged in reading, he suddenly became unconscious, and remained so for half an hour, according to the statement of his wife. After he revived sufficiently to walk about, he said he felt half bewildered, and found that his powers of recollection were greatly impaired, if, indeed, they were not sometimes entirely gone.

He could not attribute it to anything inhibited, unless it was a preparation of carbonate of potash and tincture of hyoscyamus which a distinguished Eastern physician had prescribed for him, and which he had repeatedly taken before, without any ill effect.

As the patient belonged to the class of dyspeptics, I was at first inclined to attribute his attack to some ordinary gastric derangement displaying itself upon the nervous system; but on further reflection and consultation with him, I learned that the preparation of which he took the dose in question, (a teaspoonful,) was one that he had made some time before and laid aside.

This consideration induced me to make a chemical examination of the contents of the vial. At the bottom of the vessel there was a copious, pure white, delicate deposit; the supernatant fluid was clear, and had a suspicious odor, which led me to test for prussic acid. There was a perceptible fermentation going on in the liquid.

The white sediment was collected on a filter, washed and subjected to the action of acids, and also to the red heat of a platinum spoon. But none of these agents produced any sensible impression upon it. I then exposed it to the heat of a blow-pipe flame, with carbonate of soda, and obtained, what I anticipated,—silicate of soda. The *silica* was probably derived as an impurity from the carbonate of potash, which entered into the composition of the medicine.

The filtrate was received into a wide-mouthed vial; and the

mouth covered with a slip of glass moistened on the under side with nitrate of silver in solution. In a short time, the solution was observed to become opake and white. This white film was treated with NO_5, without effect; but cyanide of potassium immediately dissolved it.

The mouth of the vial was now covered with another piece of glass moistened with NH_4 S, HS. After some minutes the glass was removed, and the moisture, now milky, gently evaporated. To the dried residue a solution of a persulphate of iron was applied by means of a glass rod drawn over the surface. The modena red streaks which appeared, confirmed the former results with Ag NO_5, and left no doubt of the presence of *hydrocyanic acid.*

As further evidence, however, of the existence of HCy in the fluid, I added to the filtrate, (about ounce of it,) solution of Ag NO_5, till all precipitation ceased. The precipitate was collected and washed; and NO_5 added. By this means the carbonate of silver, &c. were removed. The undissolved residue was washed, and was found to be soluble in cyanide of potassium; and to be decomposed by HCl with liberation of the prussic acid odor.

This was the extent of my analysis. The reader must judge for himself whether I found sufficient cause for the alarming symptoms manifested by the patient. He took no more of the medicine. More than a month has elapsed since the attack, and there has been no return of the symptoms.

Judging from the presence of HCy in the fumes over the soap kettle, and in the odor of *crude* potash, I suspect it will be found, that with moisture, potash and carbonate of potash by their reaction on organic matter, generally generate this dangerous remedial agent.

SYRUP OF LACTUCARIUM.

By Thomas S. Wiegand.

The importance of Lactucarium as an article of the Materia Medica, has long been acknowledged by many of the most authoritative writers upon medicine, being regarded by them as particularly suitable to the case of those whose idiosyncrasy forbids the employment of opium, or any of the opiate products.

From the experiments of M. Emile Mouchon, detailed in the

18th vol. of the American Journal of Pharmacy, page 32, which from the care bestowed upon the subject, seems to be entitled to great respect, ethereal and alcoholic menstrua appear to be inappropriate to the extraction of the active principles of the drug, and even were either of those solvents suitable to the exhaustion of the material, our own experience would forbid us adopting them in a satisfactory method of making a preparation which should contain in a moderate bulk an adequate dose of the remedy, and yet be free from alcoholic stimulus so undesirable in anodyne preparations.

The formula for a syrup given by M. Mouchon, while it affords a preparation which represents the medicine very completely, leaves it so weak as to be quite objectionable.

A formula which seems to answer the conditions above mentioned, is offered, in the hope that a remedy so deservedly esteemed may be more generally employed.

Take of English Lactucarium in coarse powder,	grs. 64
Carbonate of Potash,	grs. 32
Distilled water, sufficient,	
Sugar,	oz. 4

Grind the Lactucarium with carbonate of potash, and continue the trituration till the two are thoroughly mixed, add sufficient water to moisten it completely, allow it to stand for twelve hours, and displace slowly till two fluid ounces are obtained, then add the sugar and dissolve with a gentle heat.

Each fluid drachm of this syrup contains two grains of lactucarium.

NEW TEST FOR QUININE.

By A. Vogel.

Some time since I made known a new reaction on sulphate of quinine, which consisted in this, that a solution of sulphate of quinine, mixed with chlorine water, assumed a dark red coloration upon the addition of a concentrated solution of ferrocyanide of potassium. Recently, Fresenius has asserted that this reaction is not established. This was to me surprising, as I have repeatedly exhibited this reaction in my lectures, and have had much practical experience with it without once miscarrying. Al-

though, consequently, convinced of the correctness of my observation, I have, nevertheless, again undertaken the subject, to be able to learn the relations which have caused the failures in other hands. Believing that error lay in the quinine itself, I have examined several kinds of quinine derived from various sources, and obtained the reaction with all; the failure of the reaction must, therefore, be sought for in the method. By a series of researches it has been shown that, as was expected, the prevention of success is caused by the constitution of the reagents, the chlorine water, and the ferrocyanide of potassium. The chlorine water must be necessarily concentrated, freshly prepared and free from muriatic acid. If the solution of ferrocyanide of potassium is not concentrated by solution in the heat, the red coloration appears later, but can be obtained directly, and also with a diluted solution of ferrocyanide of potassium, upon the addition of a few drops of ammonia; the failure also depends upon the quantities of the reagents. Only a proportionately small quantity of the chlorine water must be taken; on the contrary, a large excess of the solution of ferrocyanide of potassium, if it be desirable not to add a little ammonia. I have further remarked that an aqueous solution of sulphate of quinine is to be preferred to a spirituous one, because the spirituous, when not sufficient chlorine water is present, precipitates the concentrated solution of ferrocyanide of potassium, and the establishment of red coloration is thereby rendered difficult. It needs be scarcely mentioned that the reagents must be applied in the prescribed order, as in any other way no reaction appears.

I now give the following method by which this reaction can be obtained, under all circumstances, by the most inexperienced. Sulphate of quinine is introduced into a test tube, and water poured on it, so that the greater part of the crystals remain undissolved. Some drops of this fluid, which is shaken to regain the sulphate of quinine on suspension, are poured into a watch glass, and so much chlorine water added that a clear, somewhat yellowish, solution results. The quantity of chlorine water applied depends upon its concentration, and upon the quantity of quinine salt. When into this chlorinated quinine solution finely pulverized ferrocyanide of potassium is introduced, it acquires a bright rose red color. The rose red color passes over soon, and particularly rapidly, if still more of the pulverized ferrocyanide

be added, into a deep dark red. By this method the failure of this reaction is entirely removed, and the research may be in such way quite as easily and certainly conducted as the well-known reactions on strychnine with chromic acid, or with peroxide of lead and sulphuric acid.—*Annals of Pharmacy*, Aug. 1853, from *Annalen der Chemie.*

ON THE RECOVERY OF GOLD AND SILVER FROM THE FLUIDS EMPLOYED FOR ELECTRO-PLATING AND GILDING.

By Prof. Bolley.

The cyanide of gold dissolved in an excess of cyanide of potassium, resists most means of separation; even sulphuretted hydrogen produces no precipitate in it. The complete separation of the gold cannot be effected in the humid way; and this has given rise to the propositions of Böttcher, Hessenberg, Elsner and others, to evaporate the fluid, mix the dry residue with an equal quantity of litharge, fuse the mixture at a strong red heat, and dissolve the lead from the fused mass by hot dilute nitric acid; by this means the gold is left as a loose sponge. A more recent proposition is that of Wimmer, by which the mass left by evaporating the fluid to dryness on the water-bath is mixed with one and a half times its weight of nitrate of potash, and thrown in small portions into a red-hot Hessian crucible. The explosions must be waited for, and the process continued until the entire mass runs smoothly. The first process has nothing against it, except the necessity of a strong fire and the employment of nitric acid; the second, on the contrary, is very unpleasant and unsafe in its performance. It is sufficiently well known that there is no substance with which nitrate of potash detonates so violently when heated as with cyanide of potassium. If the portions of the mixture employed be only a little too large, very violent explosions are produced, which cannot take place without loss.

The following process may be adopted in small operations with a platinum crucible over a spirit-lamp. The dried mass of salts is mixed with an equal quantity of powdered muriate of ammonia, and gently heated. The ammoniacal salts decompose the cyanides of the metals, forming cyanide of ammonium, which is decomposed and volatilized, whilst the acid of the ammoniacal

salt or the halogen combined with the ammonium unites with the metal which has been combined with the cyanogen. In the present case muriate of ammonia forms chloride of potassium, chloride of iron (when ferrocyanide of potassium has been employed) and chloride of gold. The latter is readily decomposed, with formation of metallic gold; the other, at least partially, with separation of peroxide of iron, in fine crystalline scales. Undecomposed chloride of iron, as well as chloride of potassium, may be extracted with water after complete decomposition, for which a slight red heat is sufficient; the gold forms a coherent spongy mass; the iron, fine light scales, which are readily separable by mechanical means. If any gold remain in the form of dust with the peroxide of iron, it may be dissolved out with nitromuriatic acid (the calcined oxide of iron long resisting the action of the acid,) and the gold thrown down by protosulphate of iron. In most cases this mode of separation will be unnecessary. The author has convinced himself, by the employment of measured volumes of the same solution of gold, evaporation, heating with muriate of ammonia, and so forth, that even the quantity of gold in such solutions may be determined with sufficient exactness.

The same process may be adopted with plating fluids; chloride of silver is obtained together with oxide of iron (from the ferrocyanide of potassium;) the chloride is readily dissolved by ammonia; metallic silver, of which however but little or none is formed, is extracted by nitric acid. It is unnecessary to say that the residue is operated upon in the usual manner to obtain the silver; nevertheless, as the decomposition of the plating fluids may be effected in the humid way by means of sulphuretted hydrogen, this process may not be so frequently adopted for silver.

Lastly, it may be useful to inform those persons who occupy themselves with electro-plastic processes, that the employment of chloride of ammonium or a salt of ammonia in this manner, furnishes a ready means of testing the composition of such fluids as are used in the formation of a galvanic coating. For solutions of copper the author employs sulphate of ammonia, because when muriate of ammonia is employed, chloride of copper is formed, which is partially volatilized with the undecomposed sal ammoniac, producing a loss of copper.—*Chemical Gazette*, Sept. 1853, from *Polytechn. Centralblatt*, 1853, p. 551.

ON THE PRETENDED OCCURRENCE OF IODINE IN MILK, EGGS, AND THE ATMOSPHERIC AIR.

By Dr. Lohmeyer.

Some years since, Chatin instituted some investigations upon the distribution of iodine; he not only found it in all spring-waters, in fresh water and land plants, in the most various articles of food, in artificial beverages such as wine and beer, but, according to him, it constantly occurs also as an essential constituent in the inhabitants of our rivers and in land animals.

As it was shown, about the same time, by Meyrac, Marchand and others, that the distribution of iodine is much more considerable than had hitherto been supposed, it could excite no surprise that it should be found in the animal organism; here, as everywhere in nature, it was to be regarded as the constant companion of the chlorine compounds.

Chatin, however, regards iodine not as an incidental, but as an essential constituent of the organs; and according to his statements with respect to the quantities of it contained in eggs, milk, &c., he appears to be perfectly right in so doing. According to Chatin, a hen's egg contains more iodine than 1 litre of milk, whilst this again contains more than our usual articles of food and beverage. He also considers iodine to be of importance in the respiratory process. Normally the air contains 1·500 milligrm. of iodine in 4000 litres, and during respiration 4·5 are said to disappear. Fourcault, who has occupied himself with the study of the causes of goitre and cretinism, examined the air in those places where these diseases are indigenous; in these localities he found the atmosphere free from iodine, and concluded accordingly that the deficiency of iodine was the principal cause of goitre and cretinism. Chatin immediately proved that the air of the Alps was much poorer in iodine than the atmosphere of Paris; he found less iodine in the valley of the Rhone than in that of the Seine, less still in the valley of the Isère, and a constant diminution towards the Alps. He only met with it again in the plain of Piedmont, after it had eluded his investigations on the French side of the Alps.

As therefore the influence of iodine appears to be of the greatest importance to the development and continuance of the animal organism, the author regarded the testing of Chatin's statements

as of sufficient importance to undertake it himself with great care.

Goitre does not occur in Göttingen, whilst in some of the neighboring villages, in Lengden, for instance, it is very frequently met with. If the want of iodine in the air were the cause of the evil, it might be expected that a difference would be presented between the quantity of iodine contained in the air of Göttingen and that of Lengden. The author therefore examined first the air of Göttingen; he allowed 4000 litres of air to pass in small bubbles through a stratum of solution of caustic soda 18 inches in thickness, adding quick lime to the solution from time to time to remove the carbonic acid which was taken up by it. The apparatus was so arranged that the passage of 4000 litres of air required nearly a whole week, so that no iodine could be lost. Nevertheless, on testing for iodine, a negative result was obtained so that an investigation of the air of Lengden must appear perfectly unnecessary.*

The author has sought for iodine in cow's milk and hen's eggs with a similar result. Thus no trace of iodine was to be found in 12 eggs or in 600 or 6700 grms. of milk. The fluids in which the iodine must be concentrated amounted in all cases only to a few centimetres; for testing them, cold starch-paste and pure nitric acid into which nitrous acid had previously been passed were employed.

The author does not deny, that, by the employment of still larger quantities of milk and eggs, the exhibition of iodine may perhaps be possible and that under certain circumstances iodine may also occur in the atmosphere, especially in the neighborhood of manufactories and chemical laboratories; but from his experiments he considers that he may draw the conclusion, that Chatin's statements are to be considered as erroneous throughout, and that the absence of iodine in the air cannot be the cause of goitre and cretinism.—*Chemical Gazette*, Sept. 1853, from *Nachrichten von der Gesellsch. der Wiss. zu Göttingen*, 1853, p. 131.

*The same result was obtained by Mr. S. Macadam of Edinburgh (see Chem. Gaz. for Aug. 2, 1832,) with whose researches the author does not appear to be acquainted.—Ed. [See also page 64 of this volume for the same paper.]

REMARKS ON THE ARTIFICIAL PRODUCTION OF SALTPETRE.

By R. Reichenbach.

It is only within the last few years that general assent has been given to the opinion that the production of saltpetre consists in an oxidation of ammonia, determined or facilitated essentially by the presence of alkaline or earthy bases.

The occurrence of native saltpetre is well known to be intimately connected with the decay and disintegration of calcareous rocks, especially felspathic limestone, which are at the same time more or less rich in organic remains, and consequently contain a certain amount of nitrogenous substance. It is this animal substance, which at a sufficient temperature suffers chemical change; that is to say, passes more or less rapidly into putrefactive fermentation, the nitrogen being either wholly or principally converted into carbonate of ammonia. Under ordinary circumstances, this volatile ammoniacal salt gradually escapes into the atmosphere; but when generated with a porous mass of rock, which admits of the penetration of atmospheric oxygen, it suffers a partial decomposition and oxidation to nitrate of ammonia as well as nitrates of lime and potash.

It is, moreover, a general fact that whenever animal substance is brought into immediate contact with potash, lime, and sand, and the whole exposed to the air, there is an abundant formation of nitrates, and this observation has afforded both an explanation of the mode in which saltpetre is formed spontaneously and a means of obtaining it artificially. It has been found to be a condition of considerable importance that the heaps of substances prepared for the production of nitric acid should possess a certain degree of porosity, so that a very large surface may be exposed to the air absorbed.

The statement of these few facts connected with the artificial production of saltpetre will suffice for a consideration of the question. Whether this process corresponds to the present state of technical chemistry, or whether it is not capable of great improvement? On examining the process in detail it will be found,

1. That the mixture of the several substances is generally conducted with too much irregularity and uncertainty, so that it is difficult to ascertain whether they are in a proper proportion.

2. That the presence or preponderance of inorganic substances, although in one respect unavoidable, retards the progress of the putrefaction, and consequently the production of ammonia, from which alone the nitric acid is formed, and it is probably owing to this circumstance that the artificial production of saltpetre goes on with such remarkable slowness.

3. The uniform maintenance of a proper temperature is not sufficiently observed.

4. Since it has become evident that the presence of ammonia is the essential condition of the formation of nitric acid, it is possibly not necessary to produce the ammonia by putrefactive fermentation. There are many other sources from which it might be more readily obtained, and then submitted in a pure state to those conditions under which it is converted into nitric acid, and thus the whole operation would be simplified and rendered independent of local and accidental influences.

When, as in some parts of the continent, the production of saltpetre is made a collateral operation of agriculture, in which case space and time are of less importance, the old process is sufficient. But the case is different when it is required to produce a certain large quantity of saltpetre annually.

First, then, as regards the present process, it must not be forgotten in the mixing of the substances to make a nitre bed that the production of nitrate of potash is the ultimate object. Consequently this base must be present in some appropriate form and in sufficient quantity. It is best to use the lime in the caustic hydrated state. It might be possible to produce, in the first instance, nitrate of lime and then nitrate of potash by a subsequent double decomposition, but it would appear, *à priori*, improbable that the lime alone would be so effective in determining the formation of nitric acid as the mixture of lime and potash. This point is one which is certainly deserving of experimental investigation.

Assuming, then, that ammonia and potash are the two substances chiefly necessary for the production of saltpetre, it remains only to ascertain the precise conditions of its formation, and to ensure an adequate supply of these substances so as to be able to carry out the fabrication of saltpetre to any extent and with any degree of rapidity.

It is worth the attempt to ascertain whether the potash required may not be derived from certain rocks, especially granite, syenite, trachyte, porphyry, basalt, &c. It is probable that these substances, when reduced to a coarse powder and mixed with a proper proportion of caustic lime, would gradually yield up their potash, while the silicic acid combined with the lime. The native saltpetre of India is produced during the decay of a limestone containing potash.

Ammonia is now so abundant a product of technical processes, that there is little fear of obtaining it in sufficient quantity. In very many instances where it is now lost it would then be worth collecting; and if all sources were exhausted there would be no great difficulty in obtaining it from the atmospheric nitrogen. Ammoniacal gas is very copiously formed when a mixture of nitrogen and water vapor is passed over a mixture of carbon and carbonate potash at a red heat.

There are likewise two other possible sources of nitrate of potash, which, although at present possessing rather a theoretical than practical interest, ought not to be passed over.

When ammoniacal gas, mixed with oxygen, is passed over ignited spongy platinum, there is formed a considerable quantity of nitrate of ammonia, a salt which may readily be converted into nitrate of potash. It yet remains to be ascertained in what proportion this formation of nitric acid stands to the consumption of fuel, to the mass and condition of the platinum, and the duration of its activity, circumstances which will determine its applicability.

Ignited peroxide of iron exercises a precisely similar action upon ammonia in the presence of oxygen, and consequently, on account of its greater abundance, will be more deserving of study in this respect.

There is, moreover, a fact long since observed by Cavendish, that by passing a number of electrical discharges through a mixture of nitrogen and oxygen, in the same proportion as in atmospheric air, a small quantity of nitric acid or nitrate of ammonia is formed. When the gaseous mixture contains hydrogen, the formation of nitric acid is remarkably facilitated, a circumstance which appears to be closely connected with the formation of traces

of nitric acid during the combustion of hydrogen in ordinary air. —*Pharm. Journ.*, Sept. 1853, from the *Jahrbuch der k. k. geologischen Reichsanstalt, Jahrg.* I., No. 2.

ON THE MEANS OF DETECTING PICRIC ACID IN BEER.

By M. J. L. Lassaigne.

It was stated about a year ago, in the *Journal de Chimie Médicale*, that picric acid was sometimes used as a substitute for part of the hops in the manufacture of beer. This adulteration, which has been adopted in some localities, cannot be tolerated, and it was with the view of putting a stop to such a practice that the following experiments were made.

The bitter taste of picric acid, which has the same character as that of the hop, cannot be distinguished by the taste from the latter when contained in beer, as I have satisfied myself by direct experiment; but its presence may be detected by some simple chemical reactions.

In studying the properties of picric acid, I have observed that this acid, which communicates its color and bitterness to water, when dissolved in beer is not precipitated by subacetate of lead, while the bitter principle and the color of the hop are almost entirely removed by that reagent. I have also observed that animal charcoal, whether purified or not, is capable of absorbing and removing the coloring matter of beer, while picric acid is unacted upon by it, the liquor retaining its original color unaltered by the charcoal.

It is on the properties possessed by these two reagents that I have founded the means of detecting small quantities of picric acid when added to beer.

In the experiments I have made on this subject I have operated on pure beer of good manufacture, and on some to which I have added one twelve thousandths and even one eighteen thousandths of picric acid. On adding to both samples an excess of tribasic acetate of lead, or agitating them with excess of animal charcoal, the pure beer is almost completely decolorized, while that containing the picric acid in the proportions mentioned, retains a citron yellow color in consequence of the picric acid not being removed.

For the detection of a smaller proportion of picric acid in beer than that above mentioned, it is necessary to concentrate the liquid before adding the reagents.—*Lond. Pharm. Journ.*, Sept., 1853, from *Journal de Chimie Médicale.*

ON CATHARTIN OBTAINED FROM THE BERRIES OF RHAMNUS CATHARTICA.

By. F. L. Winkler.

To obtain the purgative principle of these berries, fifteen pounds of them, when quite green, (collected in September,) were bruised and expressed. The juice had a dark violet color, an extremely bitter taste, and evaporated by means of a water bath, remained as a dark brown syrup. This was then exhausted several times by boiling hot alcohol (absolute) until the latter had but a slightly bitter taste. The united tinctures became turbid after cooling; they were then filtered and mixed with four times as much sulphuric ether. A large quantity of slightly bitter, dark-colored, extractive matter separated, containing no sugar. The filtered solution of cathartin in ether and alcohol was distilled in a water-bath, the cathartin remaining with the coloring matter, then treated again in the same way, and 2½ ounces of pure cathartin were obtained.

The residuum of the expressed berries was boiled with six or eight times its weight of water, set aside for several days, and a good quantity of impure Rhamnin obtained. This was then collected on a filter of dense linen, washed with water, dried, and appeared as a greenish gray mass, of a slightly bitter taste, loosely coherent. This, again dissolved in alcohol, was decolorized by animal charcoal, separated by the addition of water, and thus obtained in a pure state. The dry mass was dissolved again in absolute alcohol, and by slow evaporation ten drachms of pure Rhamnin, crystallized in pale yellow crystals, similar to cauliflowers, of a peculiar taste, little distinct, almost like dough; it is not soluble in cold alcohol nor ether, but readily soluble in boiling alcohol, and forms a mucilage, if boiled in water.

It is dissolved by caustic alkalies and their carbonates, with saffron yellow color, tasting almost like grape sugar, and deco-

lorized by acids, by which operation the Rhamnin is precipitated. It is likewise dissolved by strong chlorohydric and sulphuric acid with the same color, and precipitated by a large quantity of water. Hot nitric acid converts the Rhamnin into oxalic acid, a yellow, bitter substance, (perhaps picrinic acid), and a new crystalline substance.

Ripe buckthorn berries yielded Cathartin, but no Rhamnin; and it is probable that the Rhamnin by the ripening process, is converted into Cathartin and grape sugar.

Cathartin is a pale yellow powder, soluble nearly in any proportion of water and spirits, (not in pure ether), has a disagreeable, bitter taste, like aloes, is neutral, turns of a dark, brownish green by deutochloride of iron, gold yellow by liquor subacetatis plumbi and the alkaloids, fuses by heat, and is decomposed at a high temperature; acted on by nitric acid, it yields a good quantity picrinic acid.

The resemblance of Cathartin to pure Aloin is extended, likewise, to physiological properties. Dr. Graff, president of the medical board, (medical director,) wrote to me as follows:

"Since I had the honor to receive your compound pills of cathartin and liquorice, I have experimented with them frequently and with good effect. Pills containing one grain of cathartin, cause, in strong persons, one or two stools; in weaker ones, three or four, without any griping. In many cases the dose had to be repeated after three or four hours, to operate well. A young, stout mechanic, 20 years of age, suffering under an affection of the liver, had to take three pills pro dose, two or three times a day, to produce one or two large discharges; after taking them continually, he wanted but one dose of three pills for the same effect. In general, it is advisable to commence with one grain of cathartin, and then to increase the dose if necessary. On a sick man one grain of Cathartin had no effect at all, but taking two, he had four or five moderate stools, etc., etc. This remedy is certainly very valuable in constipation of the bowels, obstructions of the liver and spleen, in hæmorrhoids, hydropsy, and gout."

If the juice of unripe buckthorn berries be evaporated to the consistence of a syrup, and then treated with liquor Hoffmanni, (one part of ether and two parts of alcohol of 80°), cathartin is obtained in an impure state; but being very powerful it will

answer any purpose better than aloes, and should be administered, because it can be obtained at a moderate price, twelve pounds of fresh expressed juice yielding about eight ounces of cathartin.—*New York Journal of Pharmacy, April*, 1853, from *Jul. Ruthardt, Pharmaceut.*

THE ACTION OF CARBONIC AND BORACIC ACIDS ON TINCTURE OF LITMUS.

Malaguti observes, that these acids behave towards tincture of litmus as all other acids, when they are allowed to act in sufficient quantity. These acids, as is known, communicate a wine coloration to the tincture; they are considered, on that account, as very weak acids, because the other acids only produce this coloration when they are diluted in an extraordinary degree.

When carbonic is forced, under a pressure of 1½ to 2 atmospheres, into diluted tincture of litmus, it colors the tincture onion-red; but when the pressure is removed, and the excess of gas separated, either by a vacuum or a gentle heat, the tincture acquires a wine-red color. When a little tincture of litmus is poured into a hot saturated solution of boracic acid, after it has cooled for twenty-four hours, and the excess of acid separated, the mixture assumes a wine-red color; however, when the mixture is heated to dissolve the excess of boracic acid, it becomes onion-red. When the excess of acid is allowed to crystalline out, it assumes again the wine-red color. When the fluid is viewed in a thick stratum, in a glass tube, in the direction of its axis, the difference of the shades of color between a hot saturated and a cold saturated solution may be easily perceived. A hot saturated solution of boracic acid produces an onion-red color, when a little tincture of litmus is poured into it.

Sulphuretted hydrogen gas cannot be applied for a similar experiment, because it acts as a reducing agent on the coloring matter when pressed into the tincture of litmus.—*Annals of Pharmacy, July*, 1853.

ON THE PREPARATION OF COLLODION WOOL OR GUN-COTTON

By C. Mann.

During the last few months numerous statements have been made with regard to the preparation of collodion wool, from the general results of which it appears that in adopting the several methods certain proportions of the reagents must be strictly adhered to, although, frequently, these proportions are not even mentioned in the directions given.

The author of the present paper has made a series of experiments, with a view to determine what are the conditions that determine the good or bad quality of this substance. He finds that this very much depends upon the percentage of water in the sulphuric and nitric acids. In proportion as the quantity of water in the mixture exceeds a certain normal, either the collodion wool is bad or none is formed. Very concentrated sulphuric acid yields a product which, though good while in a fresh state, decomposes even at the ordinary temperature; more dilute acid, on the contrary, yields a worthless product. Neither of these products dissolve in a mixture of alcohol and ether. According to the state of hydration of the acid, the cotton may be obtained of different characters, varying gradually from an extremely soluble form to one which is equally insoluble. When, by the use of too concentrated sulphuric acid, an insoluble wool has been obtained, this may easily be rendered soluble by steeping it in the proper mixture of acid, and inversely good collodion wool may be rendered insoluble. Thus, for instance, cotton treated with a mixture of fourteen parts 3 (SO_3 HO)+HO, and twelve parts NO_5 HO, yields an insoluble product, which, when steeped in the mixture of fourteen parts $(HO)_3$ SO_3 and twelve parts NO_5 HO is converted into soluble collodion wool. As a general rule, the conditions which determine the quality of the product, are, 1. The hydration of the sulphuric acid; 2. The presence of a certain quantity of hyponitrous acid in the nitric acid; 3. The temperature; and 4. The time of steeping.

The process which the author adopts is the following:—Sulphuric acid of from 1.830 to 1.835 specific gravity, that is, of ninety-four per cent. of monohydrate, according to Ure = 65°.5 Baumé, at 59°.9 F., and represented by the formula 3 (SO_3 HO)+HO is mixed with nitrate of potash and cotton wool, neither of which require to be dried, in the following proportions:—

A 1 part cotton wool
31 parts 3 (SO_3 HO)+HO equiv.= 156
20 parts KO NO_5 equiv.= 101

The powdered nitrate is mixed with the sulphuric acid in a glass cylinder, the mixture stirred until the nitrate is entirely dissolved. Into this mixture while still warm, but not at all more than 122° Fah., the cotton wool is introduced and agitated with a rod until perfectly saturated with the acid liquid. The cylinder is then to be covered with a glass plate, and the whole left to stand for about twenty-four hours at a temperature of 84.4° or 86° F. The mixture is then placed in a porcelain mortar, and washed with cold water, until the wool has no longer an acid reaction. The moist wool is finally freed, by treatment with boiling water from the last traces of sulphate of potash, which is very obstinately retained by the cotton fibres, and communicates to the collodion solution an opalescent appearance.

When the cotton wool is allowed to remain for five or six days in the mixture at a temperature of 86° F. the collodion wool is improved in quality. When the steeping is continued only for ten or twenty minutes, the product is less perfect.

Collodion wool may likewise be obtained with nitrate of soda, in which case, however, sulphuric acid of 1.800 sp. gr.= 64°.5 Baumé is requisite. This acid may be represented by the formula 3 (SO_3 HO)+2 HO. The proportion to be used are:—

B. ½ part cotton wool
33 parts 3 (SO_3 HO)+2 HO equiv.= 165
17 parts NaO NO_5 equiv.= 85

Other mixtures of sulphuric acid and nitrate of potash or soda may be made, which yield equally good or even better collodion wool when applied to the cotton in different proportions. Thus the author made experiments with the following mixtures:

C. 2 parts cotton wool
66 parts 2 [3(SO_3 HO)+2HO] equiv. 330
20 parts KO NO_5

The sulphuric acid which is used with nitrate of soda, and in which case a double quantity is requisite, must possess a different composition, namely:—

2 [3 (SO_3 HO) + 2HO]+HO = 3 $(HO)_2$ SO_3+3 SO_3 HO+2 HO.

Further, collodion wool is obtained by using:

D. 1 part cotton wool
35 parts 3 $(HO)_2$ SO_3 equiv. = 174 spec. grav. 1.780*
33 parts 3 $(SO_3$ HO) + 2 HO equiv. = 165
17 parts NaO NO_5

As in the first experiment, this mixture of acid and salt, after standing for twelve hours at the ordinary temperature, produced some slight blackening and solution of the cotton-wool, it appeared probable that the sulphuric acid had not had sufficient time to decompose the nitrate of soda completely. In a subsequent experiment, therefore, the author allowed the mixture of acid and salt to stand for twenty-four hours, stirring it frequently. On then introducing the cotton-wool no decoloration took place, and after the mixture had stood for five days at a temperature of 86° F., the collodion wool obtained proved to be of excellent quality.

From the definite states of hydration of the sulphuric acid requisite for the nitrates of potash and soda respectively, it may be seen what must be the state of the sulphuric acid when nitric acid is employed instead of the nitrates in the preparation of collodion wool. The author has ascertained by experiment that among the products of the decomposition of KO NO_5 + 3 SO_3 HO + HO, the member KO 2 SO_3 is of no importance in the production of collodion wool, and that this is likewise the case among the products of the decomposition of NaO NO_5 +3 SO_3 HO+2 HO, with regard to the member NaO SO_3 +SO_3 HO. Consequently these may be excluded from consideration, and then the mixtures may be represented by the formulæ

SO_3 + NO_5 + 4 HO, or SO_3 3 HO+NO_5HO.

which is the appropriate mixture of acids for preparing collodion wool.

E. 1 equiv. SO_3 3 HO spec. grav. = 1.632 = 56° Baumé
1 equiv. NO_5 HO spec. grav.= 1.518 to 1512 = 49.6 to 49.12 B.

yield a mixture which converts cotton-wool into excellent collodion wool.

When the sulphuric acid is more concentrated and the nitric acid more dilute, the quantities to be taken of each so as to have 1 equiv. SO_3 for every equiv. NO_5 and 4 equiv. HO, may be determined by calculation.

For preparing collodion wool with monohydrate of nitric acid, the quantities to be taken are:

* The mixture of the two acids had a specific gravity of 1.790=64° B.

F 1 part cotton wool
13 parts SO_3 3 HO equiv. = 67
12 parts NO_5 HO equiv. = 63

Further, when from the mixture of nitrate of potash and sulphuric acid = KO NO_5 + 2 (3 SO_3 HO + 2 HO) the KO 2 SO_3 is, as above, disregarded, a second prescription for the preparation of collodion wool is obtained. There then remain

4 SO_3 + NO_5 + 10 HO, or 3 (SO_3 2 HO) + SO_3 3 HO + NO_5 HO. The same result is obtained when
NaO SO_3 + SO_3 HO is deducted from NaO NO_5 + 2 (3 SO_3 HO) + 2 HO + HO. According to the formula then deduced the following quantities must be taken:

G 1 part cotton wool.
33 parts 3 SO_3 2 HO
13 parts SO_3 3 HO
12 parts NO_5 HO

The mixture of the two acids has a sp. gr. of 1.753 or 1.750 = 63° B.

Collodion wool may be prepared both with the nitrates of potash or soda, and in a much shorter time than has been stated above, when the cotton-wool is treated with them for about an hour, at a temperature of 104° or 122° F., and this is likewise the case with a mixture of nitric acid and the double quantity of sulphuric acid. But the mixture of thirteen or fourteen parts SO_3 3 HO and 12 NO_5 HO does not, when the latter acid is very yellow, bear so high a temperature, and not even the ordinary temperature, because the hyponitrous acid generated alters the character of the collodion wool, at least in so far that its solution in a mixture of alcohol and ether gives, when evaporated upon a glass plate, an opalescent layer, and not a transparent one, like good collodion wool. When the monohydrate of nitric acid contains much hyponitrous acid, the layer has a milky appearance, and inversely the collodion layer is clearer and more colorless the smaller the quantity of hyponitrous acid present in the liquid with which it is prepared.

When cotton wool is treated with the mixture of sulphuric and nitric acids, at the temperature of 32° F., collodion wool is formed, but very slowly and imperfectly. The temperature of 41° or 46.5° F., appears to be the most favorable.

Collodion wool prepared according to any one of the methods

above described, and especially that which directly after being washed, is strongly pressed and then freed as much as possible from adhering moisture between bibulous paper, dissolves very readily in a mixture of seven or eight parts of ordinarily pure ether, and one part of absolute alcohol. The solution may be diluted with an equal quantity or even more ether, without any separation of the dissolved substance. The perfectly dry collodion wool dissolves rather slowly in the mixture of alcohol and ether, a character presented more especially by the wool prepared at low temperatures. But when the dry collodion wool is moistened with water, and then well pressed, it dissolves as readily as when fresh made. The collodion wool which is prepared with mixtures either of nitrate of potash or monohydrated nitric acid, with the so-called single quantity of sulphuric acid, and at a higher temperature, is but little dissolved, and for the most part only disintegrated by a mixture of eight parts anhydrous ether and one part absolute alcohol; that prepared with mixtures either of nitric acid, nitrates of potash or soda, with the double quantity of sulphuric acid, and at a temperature of about 86° F. is not even distintegrated by this mixure of ether and alcohol, and appears to be insoluble in it. Ether, free from water and alcohol, dissolves scarcely any collodion wool, even when it contains water. The same is the case with absolute alcohol and watery spirit in reference to collodion wool prepared at temperatures much below 104° or 122° F.

The collodion wool prepared with a mixture of thirteen parts, SO_3 3 HO+ twelve parts NO_5 HO and one or two parts cotton wool by digesting for two hours at 104° or 122° F., dissolves in absolute alcohol, and gives a thick, clear solution, like ordinary good collodion solution made with a mixture of ether and alcohol. This alcoholic solution evaporates very slowly, and leaves upon the glass plate a clear, colorless, hard layer.

The mixtures A D F yielded collodion wool, which admitted of being dried at 212° F. without decomposing, and of being kept for years without alteration. The author was unable to arrive at any corresponding results by the analysis of collodion wool which had been purified by means of carbonate of soda.—*Pharm. Journ.* Aug. 1853, from *Bullet. de St. Petersburg*, vol. xi., p. 210.

ON THE ALKALOIDS OF THE CINCHONAS.

By L. Pasteur.

It is about half a century since *cinchonine*, previously noticed by Dr. Duncan of Edinburgh, was first isolated by Gomès, a physician of Lisbon. To its presence he attributed the action of the cinchona barks; but he misunderstood its alkaline nature, which was not thoroughly appreciated until about 1820 by MM. Pelletier and Caventou; at this period these chemists also discovered *quinine*. About twelve years afterwards, two other French chemists recognized a third alkaloid, to which they gave the name of *quinidine*, in the yellow jesuit's bark. In the year 1829, Sertuerner, who had already become celebrated by his discovery of morphine, pointed out the existence, in the mother-waters of sulphate of quinine, of an uncrystallizable base, which he called *quinoidine*, and to which he attributed wonderful febrifuge properties.

The general properties of quinine and cinchonine are pretty well known; but with regard to quinidine and quinoidine, the most contradictory opinions prevail. I believe I have got rid of all the difficulties. The results of my labors also exhibit quite new molecular relations between the various alkaloids of these barks. The following are the new facts at which I have arrived.

1. *Cinchonicine.*—When cinchonine in any saline combination is exposed to the action of heat, it is converted into a new base isomeric with, but quite distinct from cinchonine. I call it *cinchonicine*. All the salts of cinchonine may serve for the preparation of cinchonicine; but in order that the conversion may be easily and completely effected, it is necessary to place the salt in certain conditions. In general, when salts of cinchonine are heated, they fuse and become decomposed immediately; and if the fusion of the salt be not effected by some means at a temperature sufficiently distant from the point of decomposition, the cinchonicine will certainly be formed, but destroyed immediately by the further action of the heat. Ordinary sulphate of cinchonine, for instance, when heated directly, becomes fused and then immediately destroyed, furnishing a fine red resinous matter, which is a product of the alteration of cinchonicine. But if a little water and sulphuric acid be added to the sulphate before subjecting it to the action of heat, it remains fused even after the expulsion of all the water at

a low temperature; and it is sufficient to keep it in this state at a temperature of 248°–266° F. for three or four hours, to convert it entirely into sulphate of cinchonicine. The production of coloring matter is very trifling, nearly inappreciable.

I prove, by facts which will be accepted by all chemists, that if heat plays a great part in this transformation of cinchonine, the vitreous, resinoid state of the product has a certain influence; and the present case of isomerism certainly related to those metamorphoses, of which mineral chemistry offers us several examples, such as soft sulphur, red phosphorus, and vitreous arsenious acid.

2. *Quinicine.*—All that has been stated in the preceding section with regard to cinchonine applies equally to quinine. Any salt of this base, heated in the same manner as the salt of cinchonine, is also converted into a new base isomeric with quinine. I call this new base *quinicine*. The most convenient mode of preparing it consists in adding a little water and sulphuric acid to the sulphate of quinine of commerce, and exposing it to the heat of an oil-bath of 248°–266° F. for three or four hours; the salt remains fused even after the expulsion of all the water, and becomes completely converted into sulphate of quinicine, with a very minute production of coloring matter.

As regards the general properties of cinchonicine and quinicine, they offer well-marked analogies with the isomeric bases from which they are derived. They especially present the greatest resemblance to one another. Both of them are nearly insoluble in water, but very soluble both in absolute and ordinary alcohol. They both combine readily with carbonic acid, and expel ammonia from its saline combinations in the cold. They are both precipitated from their solutions in the form of fluid resins in the same manner as quinine under certain circumstances. They both deviate the plane of polarization to the right. They are very bitter and febrifuge.

3. *Quinidine.*—The contradictions to be met in the works of chemists with regard to this substance all arise from a fact which has escaped them, namely, that under the name of quinidine two very distinct alkaloids have been confounded; these are nearly constantly associated by mixture in commercial quinidine, if it has not been purified by several successive crystallizations. Thus the quinidine discovered in 1833 by Henry and Delondre is quite a

different thing from that which is now called by that name in Germany and France, and the German product is very often mixed in considerable proportion with that discovered by Henry and Delondre. All the details of the properties and composition of these two quinidines will be found in my memoir. I will only add, that one of them, for which I retain the name of *quinidine*, is hydrated, efflorescent, *isomeric with quinine*, deviates the plane of polarization to the right, and possesses, like quinine, the character of acquiring a green color by the successive addition of chlorine and ammonia; whilst the other, to which I give the name of *cinchonidine*, is anhydrous, *isomeric with cinchonine*, exercises a rotatory power to the left, and does not exhibit the green coloration. This is now the most abundant of the two in commercial samples. It is always very easy, by exposing a recent crystallization of cinchonidine to warm air, to ascertain whether it contains any quinidine. All the crystals of the latter base effloresce immediately, retaining their shape, and standing out of a dead white amongst the clear crystals of cinchonidine. We may also recur to the character of the green coloration by chlorine and ammonia.

There are consequently four principal alkalies in the cinchona barks, quinine, quinidine, cinchonine and cinchonidine.

4. *Action of Heat on Cinchonine and Cinchonidine.*—I have submitted the two new bases quinidine and cinchonidine to the moderate action of heat, as I had done with quinine and cinchonine, and with exactly the same results; that is to say, the two new bases are converted into isomeric bases, weight for weight, with the same facility and under the same conditions as quinine and cinchonine. But, moreover, and this is undoubtedly one of the most important facts in this investigation, the two new bases obtained by the transformation of quinidine and cinchonidine are identical, the first with quinicine and the second with cinchonicine. In this manner we arrive at this remarkable result, that of the four principal bases contained in the cinchona barks, namely, quinine, quinidine, cinchonine and cinchonidine, the first two can be converted, weight for weight, into a new base, quinicine, which proves that they are themselves isomeric; whilst the two others are converted under the same conditions into a second base, cinchonicine, which proves that they are also isomeric.

The molecular relations, to which these results call the attention

of chemists, take a new character when we compare the rotatory powers of the six preceding alkalies. Quinine deviates to the right, quinidine to the left—both to a considerable extent. Quinicine deviates to the right, but to a very small extent compared with the rotatory powers of the two others. The same relations are presented by the three other isomeric bodies, cinchonine, cinchonidine, and cinchonicine. Cinchonine deviates to the right, cinchonidine to the left, both considerably; cinchonicine, on the contrary, produces very slight deviation to the right. The most logical interpretation of these results is the following:—The molecule of quinine is double, formed of two active bodies, one which deviates considerably to the left, and the other very slightly to the right. The latter, which is permanent under the influence of heat, resists isomeric transformation, and remaining without alteration in the quinicine, gives this its feeble deviation to the right. The other group, which on the contrary is very active, becomes inactive when the quinine is heated so as to become converted into quinicine; so that quinicine is nothing but quinine in which one of the active constituent groups has become inactive. Quinicine would also be quinidine in which one of the active constituent groups had become inactive; but in quinidine this very active group would be right instead of left as in quinine, but still united with the same slightly active right group, which being permanent remains in the quinicine, and gives it its weak right deviation. I might repeat all that I have said word for word, applying it to cinchonine, cinchonidine and cinchonicine, which are respectively constituted like their three congeners; they offer exactly the same relations.

5. *Quinoidine.*—I shall not enter into the detail of the experiments which I have undertaken upon quinoidine; but there is one point to which I wish to call the attention of manufacturers of sulphate of quinine and of the companies who collect the barks of cinchonas in America. Quinoidine is always a product of the alteration of the alkalies of the cinchonas. It has two distinct origins. It is produced in the operations for the manufacture of sulphate of quinine, and especially in the forests of the New World, when the wood-cutter, after stripping the bark from the tree, exposes it to the sun to dry it. Then the salts of quinine, cinchonine, &c. contained in the bark, become converted into resinous and

coloring matters, which form the greater part of the quinoidine of commerce. I have ascertained, in fact, that when a salt of quinine or cinchonine in a dilute or concentrated solution is exposed to the sun even for a few hours, it becomes changed to such an extent that the liquid acquires an extremely dark reddish-brown color. This change, moreover, is of the same nature as that which is effected by the influence of an elevated temperature. I believe, therefore, that considerable loss of quinine, cinchonine, &c. would be avoided, and that the extraction of these bases would be rendered more easy, if the bark was shaded from the light when collected, and dried in the shade. The manufacturer of quinine ought also to avoid the action of a bright light.—*Comptes Rendus*, from *Chem. Gazette*, Sept. 1, 1853.

ON TRUE AND FALSE CREOSOTE.

BY GORUP-BESANEZ.

Creosote has been seldom the object of scientific investigation since its discovery. The consequence is, that our knowledge of this interesting body remains very imperfect. Indeed, as great a confusion has prevailed as with phenylic acid, a body whose properties exhibit so great an agreement with those of creosote as to give rise to the belief that they were both identical, and that the difference only depended upon some accidental impurities. This is the view which has been more and more developed amongst chemists, and found an important support in the fact that the substance mostly found at present in commerce under the name of creosote, is nothing else than impure phenylic acid, and isobtained from coal tar, which can be easily proved by the determination of its boiling point, and its behaviour to chloride of iron, &c.

The creosote which I examined was obtained from Batka, of Prague, who prepares it extensively from wood tar, particularly from that of beech wood. Its characteristics and general behaviour agree completely with the description given of creosote by Reichenbach, its discoverer. It is an oily, strongly refracting, slightly yellowish fluid, of a penetrating, disagreeable, smoky, peculiar odor, totally distinct from that of phenylic acid. It tastes burning sharp; produces on the mucous membrane of the tongue a white film. In

sprit and ether it is completely soluble; in water little; yet, when shaken with water, it communicates its taste and odor, as well as its reactions. In sulphuret of carbon it is entirely soluble; on the contrary, only partly so in acetic acid. In solution of ammonia it is likewise soluble, and somewhat colors it, but on the water bath all the ammonia is evolved. Muriatic acid produces no change; on the contrary, it mixes with concentrated sulphuric acid completely, and assumes a purple violet color. A splinter of pine wood, moistened with muriatic acid, assumes, when immersed, not the slightest trace of a blue or a violet color, and chloride of iron, free from oxygen, produces not the least blue violet coloration, which this re-agent does in very dilute solutions of phenylic acid. Nor could I obtain it crystallized, although completely deprived of water, when I repeatedly exposed it to low temperatures. The specific gravity of the crude product ranged between 1,046 and 1,049. By the observation of its behaviour in high temperatures, with reference to its boiling point, the following results were obtained:—At 194 Fahr. slight ebullition took place. After a deposit had exhibited itself on the neck of the retort, between 140°, and 158°, and a milky turbid fluid had began to pass over, consisting of water, with a very fetid oil of a lower specific gravity than the water, the boiling proceeded with a continued elevation of the thermometer, and became stronger at 320°, but then almost ceased. The liquid passing over between 248 and 325°, was now clear, and possessed a peculiar odor, differing from the crude products. At 390° the boiling was again stronger, and now a body distilling in oily streaks passed over rapidly, while the thermometer rose to 398°, and now remained some time stationary; after which it rose slowly to 406°, and then until its last portion was distilled over to 421°.

These relations show, what could scarcely have been previously doubted, that the crude product was a mixture of several compounds. The circumstances that the greater portion passed over at a temperature between 397° and 406°, and that the thermometer remained some time stationary at this temperature, which is given in works of chemistry as the boiling point of creosote, show that this portion is the chief constituent of the crude material.

The next object was, therefore, the pure preparation and isolation of the creosote. For this purpose a large quantity of the crude pro-

duct was distilled, and that passing over between 397° and 406° was intercepted. This was now rectified, and allowed then to stand in a closed vessel for a day over fused chloride of calcium, and, lastly, a third time rectified. Here it was observed that the thermometer remained standing for a time at 397°, but it always rose during the distillation, if even slowly. The product purified in this way was subject to elementary analysis, with the following per centage results:—

	1	2	3	4	5	6	7	8
Carbon, . .	75,32	75,72	75,54	74,76	75,82	75,03	74,78	74,68
Hydrogen, . .	7,84	7,94	7,85	7,95	7,98	7.95	7,98	7,84
Oxygen, . .	16,84	16,34	16,61	17,29	16,30	17,03	17,24	17,48
	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00

The properties of the creosote purified in the above way, by fractional distillation, were the following:—Colorless, oily, not or only a little acid; after a long time becoming dark, strongly refracting light, of a peculiar penetrating smoky odor, and biting, burning taste, of 1,040 specific gravity at 52° Fahr., not crystallizable, and also remaining fluid at very low temperatures, in water little soluble, in spirit and ether and sulphuret of carbon soluble in all proportions. Only partly dissolved by ordinary acetic acid. Dissolves sulphur, and coagulates albumen. Kills animals, in doses of 5 to 10 drops, in a few minutes' time, with convulsions. Preserves meat and animal substances in general.

From these properties and others, there can be no doubt that the body examined by me is very different from phenylic acid, and that it is the same body, namely, true creosote, which has been described by Reichenbach and Ettling.

Another question is, whether this body is a completely pure chemical compound; whether it is to be regarded as a chemical individuum. That in creosote such a chemical individuum exists there can be no doubt, only it appears to be mixed therein with a small quantity of a body, differing in its carbon contents, but equal in its hydrogen contents. The peculiarities already pointed out respecting the boiling point of the pure product, renders this manifest above all things.

In conclusion, I will offer a practical remark. When it is desirable in commerce to distinguish whether a substance sold for

creosote is carbolic or phenylic acid, or whether it is adulterated with this body, the boiling point perfectly affords the safest conclusion. But much simpler, and quite as certain, is to test the suspected fluid with chloride of iron and ordinary acetic acid. In the presence of carbolic acid, chloride of iron causes always a blue violet coloration, and afterwards a whitish turbidity; and acetic acid completly dissolves carbolic acid, in a gentle heat. Creosote prepared from beech-wood tar is not changed by chloride of iron, and is only partly dissolved by ordinary acetic acid in the heat. To those accustomed to the odor of real creosote, the odor of the false will be a sufficient guide.

Whether in wood tar, and generally among the products of the dry distillation of wood, carbolic acid is contained, was by an extensive research of this nature principally to be learnt. In tar water, obtained by the digestion of 3 pounds of beech-wood tar, with 18 pounds of water, I could detect readily creosote, but not phenylic acid.—*Annals of Pharmacy, Sept.* 1853 from *Liebig's Annalen.*

CHEMICAL AND PHARMACOLOGICAL EXAMINATION OF KINO.

By. C. Hennig.

The author first satisfied himself, by a comparison of the most trustworthy statements, that the officinal kino known among druggists as the East Indian, should more correctly be called African, because it is for the most part the air-dried juice, which exudes from incisions made in the stems of several species of Pterocarpus, P. erinaceus, and P. senegalensis growing in the forests of Sene gambia, and P. indicus and P. marsupium growing upon the coast of Malabar, and other parts of the East Indies.

These so-called oriental varieties of kino all present the following physical characters: color garnet-red; fracture conchoidal. When chewed they color the saliva red by transmitted, and violet by reflected light; the taste is purely astringent. The fragments of kino treated with distilled water dissolve partially, communicating a yellowish red color to the water, which, when allowed to stand and even when excluded from the air, deposits a fine orange colored powder, forming a deposite of sometimes as many as three layers. This is again almost entirely dissolved by hot water or

alcohol. But neither boiling water or alcohol dissolve kino completely, a more or less swollen skeleton of each individual fragment always remaining. The addition of distilled water to the tincture causes a faint cloudiness, which disappears again spontaneously. Ether produces a precipitate in both aqueous and alcoholic extracts, but both become clear on standing. When the tincture, containing ether, is evaporated, it becomes turbid at the boiling point, from the separation of cinnamon-colored flocks, which subsequently redissolve with violent agitation of the liquid. Ether does not take up anything even from finely-powdered kino.

Tincture of kino reddens litmus somewhat more distinctly than the aqueous infusion. The former is precipitated by alkalies; the latter only by carbonate of ammonia; neither give any precipitate with lime water or tartrate of potash and antimony. Protochloride of iron gives with the aqueous infusion a deep green color, and green flocks separate after some time. Percholoride of iron gives a greyish or yellowish-green bulky precipitate; lead salts give various precipitates according as the infusion is prepared with hot water or cold, when air has access or the contrary.

African kino burnt in a porcelain crucible leaves about two per cent. of ash, consisting of phosphate of soda, carbonate of lime, and silicate of iron. When submitted to dry distillation it gives off an odor resembling vanilla, acid water then passes over (perhaps formic acid) and some empyreumatic substances not examined; pyrogallic acid could not be detected. Heated upon platinum foil it swells up, evolving first agreeable and then acid vapors.

As the author could not succeed in affecting a simple separation of the astringent principle of kino, the behavior of various reagents with aqueous and alcoholic infusions was more carefully examined. The separation of the tannic acid by means of a solution of gelatine recommended by Gerding, is imperfect; but if, on the other hand, a prepared animal skin is employed, only a little gallic acid is left in the liquid, inasmuch as the red coloring matter enters into combination together with the tannic acid, forming a red leather. The contact of oxygen with Gerding's coccotannic acid, gave a different result; a stream of oxygen passed through the aqueous infusion of kino does not cause any perceptible alteration of the tannin even after long warming, the coloring matter

alone appearing to be oxidized. The opinion that the red coloring matter is a product of the alteration of the tannic acid, is rendered improbable by the action of sulphurous acid, which gives to the aqueous infusion a yellow color, although the red substance is not converted into anything resembling tannic acid, but is partially precipitated in the form of orange-colored flocks, which redissolve in alkalies with a red color; the tannic acid gave the same reactions as before, and in the evaporated liquid crystals of the sulphate of the alkali used were formed. Moist chlorine behaved in a similar manner, with the exception that the yellow precipitate floated in a colorless liquid, and the tannic acid itself appeared to be altered.

The products obtained by the action of caustic potash upon raw kino, and those obtained by treating the powdered gum with hydrochloric acid for the purpose of separating the earthy bases, were submitted to analyses and found to correspond closely with the substance called kino red by Gerding.

Strong nitric acid decomposes all the constituents of kino, especially when heat is applied; nitric oxide and hydrocyanic acid are evolved; and the liquid contains nitropikric acid and oxalic acid.

Hennig attempted to separate the tannic acid of kino by taking advantage of the fact that ordinary tannic acid is dissolved by acetic acid, and remains in solution even on the addition of water, while the red substance of kino is at first completely precipitated on diluting the solution in acetic acid with water. Raw kino in fine powder was digested for some days with concentrated acetic acid, the liquid evaporated, and the residue digested with very cold water until it began to acquire color. The product obtained in this way was, however, too small.

The fractional precipitation of the solution of kino by means of metallic salts, especially acetate of lead, yielded larger quantities of tolerably pure tannic acid. This salt first combines, apparently in substance, with the "kino red;" subsequent precipitates always contain larger percentages of lead and larger quantities of tannic acid, but the acetic acid set free somewhat disturbs the result. For the reason the aqueous infusion of kino was treated with successive portions of hydrated oxide of lead, but still the tannic acid obtained, though large in quantity, was impure. Finally, Hennig found that the most advantageous process was to precipi-

tate the concentrated alcoholic decoction of kino with subacetate of lead, added drop by drop until a few drops of pure water filtered out of the brownish-red jelly which was formed; the mass was then digested in very cold distilled water, until it began to communicate a color to it, when it was poured off and filtered rapidly. This liquid contained a greater part of the tannic acid. This process may be supposed to consist either in a combination of the acetate of lead with the red coloring matter of the kino only, and that the tannic acid is mechanically retained until the alcoholic jelly is saturated with water, or that both substances form lead salts, and that the contact with water causes a decomposition, in consequence of which tannic acid is set free. It is advisable to use a slight excess of subacetate of lead rather than not, for the quantity of tannate of lead dissolved in that case is insignificant compared with the freedom of the tannic acid from coloring matter.

After the addition of a sufficient quantity of moist hydrated oxide of lead, the slightly reddish colored tannate of lead was separated and introduced into a retort, when it was dried in a stream of hydrogen gas. Hennig obtained from two analyses the following results, corresponding with Berzelius's formula for tannic acid of oak:

C	14	53.16	52.7
H	10	3.71	3.9
O	8	43.13	4.35

The analysis of the lead salt gave:

C	18	34.02	33.00	34.55
H	18	5.67	5.93	5.92
O	10	25.19	26.67	25·23
PbO	1	35.12	34.40	33.30

The elements are here nearly in the same proportions as in Rochleder's catechuic acid, and the difference may be owing to an admixture of acetic acid.

Hennig is of the opinion that the red coloring matter so intimately combined with the tannic acid, may be obtained best by treating the aqueous infusion, from which the above-mentioned yellow deposit has separated, with finely powdered hydrated oxide of lead, until the liquid is nearly decolorized. The substance obtained from the lead compound in the ordinary manner, gave on analysis

C	-	11	-	43.65	-	43.71
H	-	5	-	3.31	-	3.31
O	-	10	-	53.04	-	52.98

Basic acetate of lead is better suited to the separation of this red coloring matter than neutral acetate; however, the lead compound prepared with the former, is not one with an excess of base, but shows that the above empirical formula must be multiplied by 5:

C	-	55	-	38.08
H	-	25	-	2.88
O	-	50	-	46.16
PbO	-	1	-	12.88

Hennig calls this substance kinoic acid.

The third substance contained in African kino is very difficult to obtain colorless and free from the above acid. Hennig endeavored to prepare it by digesting the already mentioned spontaneous deposit from the aqueous infusion with successive quantities of water until it was no longer colored upon standing, and gave no reaction with perchloride of iron, then extracting it with strong alcohol, saturating the tincture with neutral acetate of lead and drying the precipitate, collected on a filter, under the air-pump. Analysis gave 25.29 per cent. oxide of lead and

C	-	29	-	41.74	-	41.74
H	-	22	-	4.99	-	4.73
O	-	25	-	53.27	-	53.53

corresponding closely with the formula of Jahn's pectic acid. This substance appears to be more prone to alteration by external influences than the former, and passes finally into ulmic acid, which partly constitutes the residue left on the extraction of kino by water or alcohol.

The quantitative relations of the several constituents of kino may be represented in the following order:

Kinoic acid,
Tannic acid and a trace of gallic acid,
Pectin,
Ulmic acid,
Inorganic salts with an excess of earthy bases.

Bischoff and Mohr have already put forward the opinion that the astringent substance in kino is identical with ordinary tannic

acid, at least in reference to the characteristic precipitation with persalts of iron; and the possibility of obtaining this reaction with various kinds of kino, tormentilla, and other plants, induced Hennig not only to give up the opinion that coccotannic acid is a definite substance, but likewise to regard the different kinds of tannic acid, which precipitate persalts of iron green or grey, and are admitted by Chemists to be in almost every case distinct substances, as intimate mixtures of tannic acid, which gives a blue precipitate with persalts of iron, and some modifying substance, such as a yellow or red coloring matter. He found, however, that the tannic acid from kino differed from that of the oak in two particulars, viz., the solubility in ether and the reaction with potassio-tartrate of antimony; but he considers that the minute and probably inappreciable quantity of kinoic acid mixed with the tannic acid might be sufficient to account for these discrepancies.

The red substance which Hennig calls kinoic acid corresponds with the coloring matters associated with tannic acid in elm bark, catechu, cinchona bark, coffee, &c., and cannot, in kino at least, be regarded as a product of the oxidation of tannic acid, but is probably the derivative of a colorless substance, for, according to Pereira, the fresh juice of the kino-tree has but a faint reddish tint.

This red substance is more readily soluble in alcohol than in cold water, and to it the alcoholic solution owes not only its intense red color but likewise its acid reaction. It gives a yellowish brown precipitate with perchloride of iron, and a brownish red one with acetate of lead. It partly separates from the hot aqueous solution on cooling. From these characters many who have previously examined this substance inferred that it was a resin, an opinion which Mohr opposes. A. W. Buchner states that he has detected catechine in kino, and ascribes to it the production of a green precipitate with persalts of iron. Hennig, however, expresses his conviction that catechin is not present in true kino, and is only a constituent of those drugs which are varieties of catechu, although frequently confounded with kino, viz., Uncaria or Nauclea Gambir, the product of Erythina monosperma.

The behavior of this red coloring matter towards the tannic acid is remarkable, for it not only adheres to it with obstinacy, perhaps holding it, together with the pectin, for some time in solution, but

likewise gives reactions with acids, bases, and salts, in a manner resembling the conjugate acids. Hennig considers that the red coloring matter of kino originally existed in a colorless state, combined with the tannic acid, and that during its subsequent alteration by the air, in consequence of the absorption of oxygen, the state of combination is not destroyed, but continues, perhaps, even until the formation of ulmin has taken place.

The presence of pectin in kino has already been conjectured by Pereira. He considers "that kino consists principally of a peculiar substance (eucalyptin) analogous somewhat to pectin and tannic acid," and he infers this especially from its behavior with alkalies and the precipitate formed with lime water. Still this precipitate could not be obtained with African kino, which is not the produce of Eucalyptus resinifera. The vegetable gelatine is the cause of the kino swelling in water and alcohol, and gives rise to the formation of the substance deposited from solutions of kino, even when the air is excluded, and gradually becoming more insoluble on further treatment with indifferent menstrua. It is this circumstance which has led to the opinion that kino is a gum, although no one has ever obtained from it a substance soluble in water and precipitable by alcohol. But the pectin, in its combinations with earthy bases, or with tannic acid, must behave in a very variable manner with reagents, unless indeed we must ascribe to the difficultly removable kinoic acid (Vauquelin obtained only a *red* gum) at least such an influence upon the pectin that it separates so quickly from cold water, but is then dissolved by alcohol as well as by hot water.—*Pharm. Jour.* Aug. 1853, from *Archiv. der Pharmacie*, Febuary, 1853.

NOTE ON THE OZONIZATION OF THE OILS OF LEMON AND TURPENTINE.

By C. Greville Williams.

In the Philosophical Magazine for June there was a short letter addressed to the Editors by me, "On a Method of distinguishing the Volatile Oils of the Series $C^5 H^4$."

Since that time I have made several experiments on the oils of turpentine and lemons, the results of which, I am in hopes, are likely to lead to a more complete investigation of this part of organic chemistry.

I have alluded in that letter to Schönbein's views of the nature of the principle which gives to some of the oils the power of converting the sulphuret into the sulphate of lead.

I have now found that distillation, or simply raising turpentine to its boiling-point for a short time, is sufficient to destroy its oxidizing property; but I failed to detect free oxygen in the air of the retort during ebullition.

On exposure to the air for twenty-four hours in an uncorked flask, the oil becomes again partially ozonized; and after forty-eight hours I found the power of discharging the color from darkened lead-paper almost as strong as it was previous to the distillation.

It is very remarkable that the residue of the distillation, which was slightly yellow, had in this time acquired more than twice as much bleaching power as the colorless distillate.

I have strong reason to believe, from several of the phœnomena which I have observed, that the ozone, instead of being liberated from the heated turpentine as gaseous oxygen, combines with it to form a resin, which remains behind in the distillation.

On this supposition, hydrogen ought to be liberated, but I have not detected it, and probably the quantity is too minute to be separated on the small scale in a state fit for examination; or, if ozone be O^2, it is possible that it may react in such a manner, that an equivalent of oxygen unites with the turpentine, and the other forms water with the hydrogen; and in support of this supposition I may adduce the fact, that on distilling the ozonized turpentine, the first portion came over cloudy from the presence of water.

It is important to observe, that oil of lemons, as pure as I have been able to obtain it, if exposed for a very considerable period to the atmosphere, acquires the power of discharging the color from darkened lead-paper, though to a very slight extent compared with turpentine; and it results, in effect, that the difference in the behaviour of the two oils is only one of degree.—*Chem. Gaz.*, Sept., 1853.*

* [The reader is referred to Dr. Plummer's papers on this subject at pages 398 and 508 of this volume.—Editor Am. Jour. Pharm.]

ON THE PURIFICATION OF GLYCERINE, AND ITS EMPLOYMENT IN THE ARTS.

Report by M. Chevalier on a Paper by M. Bruère-Perrin.

It is well known that the discovery of glycerine dates from 1782 or 1783; that it is due to Scheele, who made known the fact that oils and fats contain a saccharine matter which is obtained by treating two parts of oil with one part of litharge, adding some water, and applying heat, and afterwards separating and purifying the saccharine matter which is found in the mother-liquor. Scheele published the results of his investigation on this subject in a communication bearing the title *De Materiâ Sacchariná peculiari Oleorum expressum et pinguedinum*, which appeared in the *Transactions of the Royal Academy of Sweden*, in 1783. In this publication Scheele gave the name of *sweet principle of oils* to glycerine, from the fact of its having a saccharine character, and of its solution yielding a syrupy product on being evaporated.

The discovery of Scheele was circulated through the scientific journals, and especially Crell's Journal for 1784, and afterwards the Chemical Works of Bergmann, edited by Guyton de Morveau.

By the subsequent extension of scientific investigation it was established that oils are composed of fatty acids and glycerine, and that the latter, which plays the part of a base, is separated in saponification.

Glycerine, although it has been well known to Chemists, and although it has been produced in very large quantities since the development of the industrial arts in France, was not employed; being considered a product of the laboratory—curious, but not susceptible of any useful application.

The first use to which glycerine was applied was in medicine; in fact, the sweet principle of oils was first employed as a remedy for diseases of the ear by an English surgeon. This application of it having been made known, the attention of medical men was directed to glycerine, and soon afterwards it was recommended as a valuable application for diseases of the skin. Trials of it were made in Paris by Bazin and Cazenove; in London by Yearsley, Wakley, and others; in Russia by Dr. Dallas, of Odessa, who without any hesitation pronounced glycerine to be the best

of cosmetics. It was established from the experience of these medical men that glycerine when applied to the skin softens it, and promotes cicatrisation of cracks and fissures.

The memoir of M. Bruère-Perrin relates to the means of purifying glycerine. It is known that as usually obtained it has a disagreeable odor, and that it has been proposed to purify it by passing through it a current of carbonic acid gas to precipitate the lime which it contains. According to M. Bruère-Perrin this mode of operating only removes the excess of lime present and not that combined with fatty acids.

M. Bruère-Perrin adopts the following method for effecting the object required:—1st. He determines by means of oxalic acid, the quantity of lime existing in the liquid to be purified. 2d. The proportion of lime being thus determined, he adds to the liquid a quantity of sulphuric acid sufficient to convert the lime into insoluble sulphate of lime. 3d. He then concentrates the liquor in a tinned copper pan, stirring it briskly during the concentration by means of an agitator kept in motion by machinery. During the concentration there is a disengagement of vapors, having a disagreeable odor, and a partial decoloration of the liquid takes place at the same time. 4th. When the liquid has acquired a density of 1.075, it is allowed to cool, and then passed through a filter, to separate the sulphate of lime; the excess of acid which has been used in the previous part of the process is now saturated with carbonate of potash, and the liquid again evaporated with constant agitation until it has a specific gravity 1.19, when it will deposit a certain quantity of sulphate of potash in a gelatinous mass; it is then allowed to cool, strained, and the deposit washed with a small quantity of water to which a little spirit has been added. 5th. It is again evaporated, still keeping it agitated, and after bringing it to a specific gravity of 1.24 while hot, it is left to cool, when a further precipitation of sulphate of potash takes place, from which it is filtered.

The product resulting from these operations is of an amber color, free from any marked odor, having a sweetish taste, and being unctuous to the touch. In this state it is treated while cold with animal charcoal, and filtered. It is now free from color or any sensible odor.

Glycerine, like water, mixes with aqueous liquids, with alcohol,

and with acetic acid; it moistens bodies without rendering them greasy; like oil, it is unctuous to the touch, and does not evaporate when exposed to the air. It is easily charged with the aroma of volatile oils; it does not become rancid, nor does it ferment.

M. Bruère-Perrin has introduced glycerine into toilet soaps, and has used it in the preparation of cosmetic vinegar, aromatized spirits, and several other articles of perfumery. We are assured that the soap with glycerine retains its original soft consistence, and that the unctuosity of the glycerine is imparted to the skin. We have tried several of these preparations and verified the descriptions given of them.—*Pharm. Journ.*, Sept. 1853, from *Journal de Chimie Médicale.*

ON THE DETERMINATION OF THE STRENGTH OF PHARMACEUTICAL PREPARATIONS CONTAINING HYDROCYANIC ACID.

By Mr. James Roberton.

Of all medicinal preparations there are none which are more liable to variation of strength, and none which require greater care in their preservation, than those which contain hydrocyanic acid. From recent examinations it has been found, that in that particular preparation known as Scheele's acid, these variations have ranged from 4 to 5 per cent. And in the aq. lauro-cerasi I have sometimes failed in detecting the presence of the acid beyond the slightest trace.

In medical practice the evil attending such a want of uniformity in such a remedy is at once apparent.

To the Pharmaceutist the possession of a reliable test for ascertaining from time to time the actual condition of such compounds is of great practical value. For accuracy of determination and ready application I am unacquainted with any means so useful as the cyanometric process, proposed by MM. Fordos and Gélis for the estimation of the commercial value of cyanide of potassium, founded upon the reaction of iodine upon the cyanides, and which consists in the absorption of the iodine up to the point of saturation, beyond which the free iodine becomes immediately apparent.

In the practical use of this test it is only necessary to arrive

at the true standard of strength of the several pharmaceutical preparations containing prussic acid. A test solution of iodine, of a definite strength, is then prepared (three grains to the ounce answers very well,) which may be put into a Gay-Lussac's pouret, from which it is dropped into a certain quantity of the liquid under examination, till a permanent yellowish tinge becomes visible, when the quantity employed is read off from the graduated scale and the strength of the preparation at once determined. The process gives not only the comparative value but the actual per centage of hydrocyanic acid present, as every equivalent of cyanogen absorbs one equivalent of iodine. I have found this process of great practical utility, and recommend it for the adoption of my fellow Pharmaceutists.—*Pharm. Journ.*, Sept., 1853.

ON SEBACIC ACID.

By Henri Carlet.

Since the discovery of sebacic acid by Thenard, this acid has always been prepared by the process indicated by that illustrious chemist, that is to say, by the distillation of fat. This process only gives small quantities of sebacic acid; consequently the properties of this acid and of its compounds have been but little studied. In his researches upon castor oil, M. Bouis has indicated a ready mode of preparing sebacic acid; at the close of his investigations he had obtained a considerable quantity of it, which he was so good as to place at my disposal. I undertook this investigation with the view of ascertaining the identity of the acid obtained by the old and new processes, and adding some new facts to its history.

The following are the principal results at which I have arrived:—

The acid obtained by both processes is the same substance; its composition, long since indicated by Dumas and Peligot, is represented by the formula $C^{20}H^{18}O^{8}$. The average of five analyses of sebacic acid gave me C = 59·25, H = 9·07 per cent.

Sebacic acid in a state of purity is white, solid, and fusible at 261° F. The density of the fused acid is 1·1317. It is sparingly soluble in cold, but very soluble in hot water; it is also very soluble in alcohol, ether, and fatty bodies. Chlorine acts

upon it only under the influence of the solar rays; it gives rise to two products of substitution, which are represented by the formulæ $C^{20}\left(\begin{matrix}H^{17}\\Cl\end{matrix}\right)O^8$ and $C^{20}\left(\begin{matrix}H^{16}\\Cl^2\end{matrix}\right)O^8$. These two products are of a yellow color, and of a pasty consistence at ordinary temperatures.

Treated with nitric acid, sebacic acid furnishes succinic acid.

A certain number of salts formed by sebacic acid have been submitted to analysis; their composition confirms that which has been given for the acid. The formation of acid sebates has been proved; these, with the exception of sebate of ammonia, are very readily decomposable.

A new ether has been prepared, the sebacic ether of wood spirit, or methylosebacic ether, $C^{20}H^{16}O^6$, $2(C^2H_3O)$. This substance is readily obtained by the following process:—A certain quantity of sebacic acid is dissolved in concentrated sulphuric acid, which is readily effected without any elevation of temperature; wood-spirit is then poured by little and little into the solution, shaking the mixture, and keeping it in cold water to avoid elevation of temperature; a large quantity of water is then added to separate the ether produced, which is washed first with slightly alkaline water, and afterwards with pure water; lastly, it is purified by crystallization in alcohol. Methylosebacic ether is solid at ordinary temperatures; it fuses at 78° F., and crystallizes in beautiful needles during solidification. It is heavier than water when solid, but lighter when fused; its density consequently differs very little from that of water. It has a very faint odor; at 545° F. it boils without alteration. It is decomposed by potash, giving sebate of potash and wood-spirit.

The sebacic ether of ordinary alcohol, $C^{20}H^{16}O^6$, $2(C^4H^5O)$, has also been analysed. This substance is fluid at a temperature above 16° F.; it is lighter than water, and boils at a temperature of 496° F.

Lastly, I have repeated Rowney's experiments upon sebamide and sebamic acid, preparing sebamide by the action of ammonia upon methylosebacic ether, as shown by the following formulæ:

$$\underbrace{C^{20}H^{16}O^6, 2(C^3H^3O)}_{\text{Methylosebacic ether.}} + 2NH^3 = \underbrace{2C^2H^4O^2}_{\text{Wood-spirit.}} + \underbrace{C^{20}H^{20}N^2O^4}_{\text{Sebamide.}}.$$

I have also proved the conversion of sebamide into sebamate

of ammonia under the influence of water, as shown by the following formulæ :—

$$\underbrace{C^{20}H^{20}N^2O^4}_{\text{Sebamide.}} + 2HO = C^{20}H^{22}N^2O^6 = \underbrace{C^{20}H^{19}NO^6, NH^3}_{\text{Sebamate of ammonia.}}.$$

My results in other respects are completely in accordance with those of the English chemist.—*Chem. Gaz., Sept.* 1, 1853, from *Comptes Rendus, July* 25, 1853.

OVER-HEATED STEAM APPLIED TO THE CARBONIZING OF WOOD.

For several years past, over-heated steam has been used in numerous industrial operations, and we may say generally that it may be employed in all processes in which a temperature between 100° and 500° C. is required. Among these processes are the extraction of wood-spirit, the continuous baking of bread, the preparation of sea-biscuit, the drying of wood, the preservation of meats, the extraction of volatile substances insoluble in water, the purification of fatty acids, by MM. Leplay and Dubrunfaut, the extraction of the mercury from the residues of zinc amalgam, by M. Violette, and finally, the carbonizing of wood, by the same chemist. M. Violette is a member of the Commission on Powder and Saltpeter, and in this situation he has turned his attention to the ingredients of powder, the manufacture of which still admits of much improvement. The charcoal employed in this manufacture is of a quality intermediate between wood and ordinary charcoal (*charbon roux,*) and is produced at 300° C.; at a higher temperature it becomes black charcoal, and at a lower the carbonization is incomplete.

By the old process of heating in closed cylinders, 10,000 kilogrammes of wood furnished 2000 kil. of black charcoal, and 1300 of red. The new process with steam yields a better article in larger quantity, for 10,000 kil. of wood give 4000. The wood immersed in the vapor is readily carbonized, and as it is easy to regulate the temperature of the vapor, charcoal may be obtained of a constant and uniform character. It is some years since that over-heated steam was first adopted in this process, by M. Violette, and now the red charcoal, before employed

only for the finest powder, is in general use for the cheaper kinds, so simple and certain is its preparation by means of steam.

M. Violette communicates now to the Academy some new results. He shows that the change to charcoal takes place differently with different woods, and that the products of the same temperature differ in elementary constitution. Exposed to moist air, the charcoals absorb more water, the lower the temperature to which they were exposed, and the inverse is true of their power of conducting heat or electricity. Charcoal made at 1500° C. conducts much better than the charcoal of gas retorts, and serves perfectly for electric illumination. The density increases in the same proportion. When lighted, charcoals remain ignited for a time, which decreases as the temperature of carbonization increases. The charcoal made at 260° C. burns more easily and longer; that made between 1000° and 1500° C. will not ignite or burn.

The most inflammable of all charcoals is that of an Agaricus. It takes fire spontaneously at 300° C. Other charcoals, prepared at the temperature 300° C., take fire in air spontaneously between 360° and 380°, according to the wood that has afforded them, the charcoals of the lighter woods burning the most readily.

When charcoals are mixed with sulphur, they inflame at a temperature much below that required when alone; the mixture of the two prepared between 150° and 400° C., is wholly consumed at 250° C. On the contrary, when the charcoal employed has been prepared at 1000° or 1500° C., only the sulphur burns.

To decompose saltpeter, the charcoals require a higher temperature; a heat of 400° C. is needed for charcoals prepared between 150° and 432°, and a red heat for those made between 1000° and 1500°.

Sulphur decomposes saltpeter at a higher temperature than charcoal requires, viz., at 432°. The sulphur alone inflames in common air at 250° C., and not at 150°, as stated in treatises on chemistry.

The deflagration of powder takes place at 250° but its combustibility varies with the charge and the size of the grain. The

powder in grains burns between 270° and 320°, while powder pulverized, burns between 265° and 270°.

In view of the facts, M. Violette concludes that it is necessary to revise the charges employed, taking into consideration the actual composition of the charcoal. Trials made with this in view upon hunting powder, with charges calculated according to the actual composition of the charcoal, have given a range much beyond the standard rate obtained with the ordinary powder.—*J. Nickles, in Amer. Jour. of Science and Arts, Sept.* 1853.

ON THE PREPARATION OF LACTATE OF PROTOXIDE OF IRON.

By M. C. J. Thirault.

In the preparation of lactate of iron by the processes described in chemical works, difficulties are frequently encountered, especially in the concentration of the liquor for the purpose of obtaining the salt in crystals. Even should a first crystallization be obtained without difficulty, on concentrating the mother-liquors in order to obtain a second crystallization, the liquid acquires a reddish tint owing to the peroxidation of the salt, which now refuses to crystallize. Another difficulty presents itself in drying the lactate of iron when obtained. If certain precautions be not taken, the salt, instead of being a yellowish white with a tinge of green, acquires a reddish-yellow color, in which case it is in great measure peroxidized.

All these difficulties, which I have experienced in making the salt for the first time, in addition to the facility with which lactic acid, combined with lime may be artificially prepared, induce me to publish the processes which I have always found successful.

There are two process for obtaining solution of lactate of protoxide of iron, either of which may be employed with equal success. The one consists in the direct action of lactic acid on iron filings, and the other in the double decomposition of protosulphate of iron and lactate of lime. But to whichever of these the preference is given, it is essential, in carrying out the process according to my mode of operating, to have a small quantity of lactic acid in reserve.

The following is the mode of operating if the former of the two processes indicated above be adopted:—

After having prepared lactate of lime in the usual way, by artificial means, it is necessary to test the degree of purity of the salt, as it is difficult to get it always in the same state, for not only does it frequently contain carbonate of lime, but the amount of water present is always variable. It should be ascertained, therefore, what quantity of sulphuric acid of a definite strength is required for the complete decomposition of a given quantity of the lactate.

For the preparation of lactate of iron a certain quantity of the lactate of lime is mixed with the required quantity of sulphuric acid for its decomposition, the latter being mixed with ten or twelve times its weight of water, and allowed to stand in contact with it, without heat, for forty-eight hours, the mixture being stirred from time to time. It may then be filtered through a cloth to separate the sulphate of lime, when a solution of lactic acid, sufficiently pure for the purpose intended, will be obtained.

If it be desired to get the lactic acid in a greater state of purity, the decomposition of the lactate of lime may be effected with oxalic acid instead of sulphuric acid, but for the purpose referred to this is unnecessary, as the small quantity of sulphate of lime which it would retain when sulphuric acid is used would be deposited during the concentration of the solution.

Two-thirds of the lactic acid, obtained in the manner indicated, is to be added to iron filings in an iron vessel, and the action promoted by the application of heat. When the iron ceases to be acted upon, the liquor is to be filtered, and if the directions above given have been followed it will be in a condition favorable to crystallization. The solution, as it filters, should be received in a vessel immersed in warm water, and should be subsequently covered. After five or six days the sides of the vessel will be found to be covered with a crystalline coat of lactate of iron. It only remains to dry the salt, which is very easily effected by first washing it with a mixture of one part of lactic acid and eight parts of spirit, and afterwards exposing it to a temperature of from 60° to 70° Fahr., on filtering paper or on a chalkstone.

In order to effect the crystallization of the mother-liquor some of the free lactic acid, which was kept in reserve, is to be added

to it, together with some iron filings, and the mixture rapidly evaporated, while the hydrogen gas, resulting from the action of the acid on the iron, is being evolved. The lactate is thus preserved from undergoing peroxidation, and the whole of the liquor may be exhausted of its salt.

An equally satisfactory result with that above described may be obtained by double decomposition, but as it is necessary in this case to use very weak solutions of sulphate of iron and lactate of lime, and subsequently to concentrate the liquor in order to effect crystallization, the peroxidation of the salt must be prevented by keeping up the disengagement of hydrogen in the manner already described.—*Pharm. Journ.* Aug. 1853, from *Journ. de Pharmacie.*

ON PORTLAND ARROW-ROOT.

By Mr. T. B. Groves.

In the course of lectures on Materia Medica at the Pharmaceutical Society, delivered in the session 1850–51, by our late much lamented Professor, Dr. Pereira, he mentioned some facts relative to the manufacture of *Portland Arrow-root*, which led me to infer, that he considered it was carried on to a considerable extent by the inhabitants of the Isle of Portland. Living within a short distance of the island, I have thought it desirable to make some inquiries to ascertain to what extent it is carried on at the present time. Dr. Pereira probably derived his information principally from an article in the Transaction of the Society of Arts, vol. xv. (1797,) in which it is stated, that in the year 1797 the gold medal of the Society was awarded to Mrs. Jane Gibbs, of Portland, for producing a sample of starch fit for economic purposes, from materials unfit for the food of man. The *starch*, or *arrow-root*, as it is usually called, was prepared by her crushing in a mortar the corms of the *Arum maculatum*, stirring the mass with water, and straining off the liquors, from which the fecula was allowed to subside; this was again washed, and then dried. She stated, and the statement is confirmed by the then Rector of the island, that she had in her possession two cwt. of the starch, and was ready to supply any quantity of the same whenever required, at the price of 1l*d.* per lb. Although there is no doubt that the quantity of the starch manufactured was much greater at that time than the pre-

sent, yet its manufacture was never of much importance; it is now almost extinct, and the arrow-root never seen out of the island except in the hands of the curious. From my inquiries I have learned, that many years ago it was customary to crop the land only every other year, allowing it to remain fallow in the intervening period, and that in the fallow fields leave was given to the inhabitants to dig for the roots. This custom has been abandoned, and the usual system of rotation of crops introduced. The common, too, has of late years been much infringed upon by the Government for public purposes, and also by speculators for quarrying for stone. These causes have very much interfered with its manufacture, so much so indeed, that a few years since, wishing to procure a sample for a friend, to illustrate a lecture on dietetic articles, I found it very difficult to obtain even a half a pound of it. Within the last week I have ascertained that one old woman is the only person who now prepares any, and she gives as her reason for doing so, that "poor folks now-a-day are glad to turn an honest penny anyhow." At the present time the *Arum* is not very plentiful in the island, although there is still a vast extent of land that will never admit of cultivation on account of its stony character, which, doubtless, produces most of the small quantity now obtained. With the exception of the old woman previously mentioned, liberty is not now obtained to dig in the cultivated fields and pastures.

The *Arum maculatum* is commonly called *arrow-root* or *starch-root*, but the vulgar names *cows and calves*, and *lords and ladies*, are also known, though not so frequently used. The proper season for collecting the corms is when the plant has perfected its growth. This is generally in the months of May and June. Those which are collected in May yield a much less proportion of starch than those collected later. The fresh corm is extremely acrid, producing a most disagreeable tingling and pricking sensation in the mouth, when chewed. This acridity I found was not completely removed by toasting. Lindley states that the corms are edible when deprived of their acridity by boiling, but I have never known them so used. This acridity renders it necessary to bruise the corms in a stone mortar, and to avoid, as much as possible, handling them until after they have been washed. The process now employed for the separation of the fecula is the same as that described by Mrs. Gibbs. The corms yield, according to Mrs. Gibbs,

four pounds of fecula to the peck. My informant tells me she obtains on an average three pounds from a peck of corm, more in June, less in May. During the whole season she considers three dozen pounds to be a good average quantity to obtain, and for this she asks 1*s*. 4*d*. per pound. It is highly valued by the Portlanders, who say that it is good for sick people, and looks, when prepared, very different from the *arrow-root* of the shops. I have compared it with *Bermuda Arrow-root*, and find that it does not make either so clear or firm a jelly, but is perfectly inodorous, tasteless, and destitute of color. The granules, when viewed under the microscope, appear of an irregular spherical shape, varying much in size, but are on an average much smaller than ordinary starches, except rice starch. The hilum is not very distinctly marked, appearing plainly only in the larger granules.

The *Portland Arrow-root* is, I believe, only made in the Isle of Portland; although there is an abundance of the *Arum* in some of the commons near Weymouth, yet the country people do not appear to know that it is of any use. This will, doubtless, appear strange to those unacquainted with Portland, but when we consider that until with a few years the Portlanders have kept themselves as much as possible aloof from the rest of the world, even forsaking their friends who dared to marry out of the island, and not permitting a stranger to settle amongst them, we can no longer wonder that they have kept their knowledge to themselves. They are probably a race of entirely distinct origin from the inhabitants of the main land; even now they use words which are not understood by us. This *arrow-root* has been prepared by them from time immemorial; and it is very probable, that living on a barren island and depending principally on fish, they may have been compelled by necessity at some time to seek subsistence by preparing the corms for food.

It is a singular fact, that the plant is called *arrow-root* by the islanders, perhaps from its sagittate leaves. May not the *Maranta arundinacea* have derived its English name from the previously known and appreciated *arrow-root* of the Isle of Portland?—*Transactions of the Phytological Club, in Pharm. Journ.* Aug. 1853.

ABSTRACT OF MINUTES OF THE PHILADELPHIA COLLEGE OF PHARMACY.

At a Stated Meeting held 9th mo., (Aug.) 26th, 1853. First Vice President, Charles Ellis, presiding. E. Parrish was appointed Secretary for the evening.

After reading the minutes of the previous meeting, and of the Board of Trustees for past six months,

The Corresponding Secretary produced letters received by him, from Dr. William Darlington, of West Chester, Pa., Asa Gray, Cambridge, Mass., Dr. Justus Leibig, of Munich, Bavaria, and C. Gerhardt, of Paris, acknowledging the receipt of Certificates of Honorary Membership, and thanking the College for the honor conferred by their election. He also informed that Elias Durand, of this city, had called personally to make a like acknowledgment, and had also addressed a similar note to the President of the College.

On motion it was ordered that these letters be preserved in the College Library, with the other similar original manuscript letters belonging to the College. Also, that the manuscript Theses in the hands of the Professors and on file in the College, be suitably bound under direction of the Library Committee of the Board, and added to the Library, and that the future Inaugural Theses be similarly disposed of.

The following Report was read and accepted.

To the Philadelphia College of Pharmacy.

The undersigned, a part of the delegation from this College to the American Pharmaceutical Association, Report, that they proceeded to Boston, in accordance with the published Call of the President, and met the Association on the 24th ult., at the Hall of the Massachusetts College of Pharmacy.

The meeting was well attended, and marked with unrelaxed interest to the termination of its sessions on the afternoon of the 26th. The principal subjects that occupied the attention of the Association, were the Statistics of Pharmacy in the United States, the working of the law for the Inspection of Drugs, the sale of Poisons in this country in regard to regulating its present unchecked condition, Pharmaceutical Education as relates more especially to the tuition extended to apprentices and others in the shop, the condition of home adulteration, and the propriety of offering annual prizes for Essays on Pharmaceutical subjects, &c., all of which will be found more fully set forth in the published "Proceedings" herewith presented.

The good feeling and earnestness that prevailed throughout the sittings are, in the opinion of the undersigned, sources of great encouragement to those who look to this movement for many desirable reforms; and they believe, without interfering at all with the proper spheres and functions of the Colleges of Pharmacy, that the American Pharmaceutical Association is destined to elevate the standing of the Pharmaceutists of the United States, by bringing together the earnest men of the whole profression and directing their efforts.

CHARLES ELLIS,
WILLIAM PROCTER, JR.,
EDWARD PARRISH.

A suggestion relative to the publication of an edition of Latin Labels with gilt letters on a dark ground, was referred to the Committee on Latin Labels with authority to act if deemed by them expedient.

The following Resolution offered by Prof. Procter, and amended with his consent by Prof. R. P. Thomas, was unanimously adopted, and the Corresponding Secretary was directed to enclose a copy thereof to Prof. Royle, of London, and Ellis Yarnall, Jr., of this city.

Whereas, Ellis Yarnall, Jr., of Philadelphia, during a recent visit to London, having obtained through Dr. J. Forbes Royle of London a valuable collection of specimens of East Indian drugs and other productions, being a part of the East India Company's deposit in the Great Exibition of 1851, and having presented them to this College, therefore it is

Resolved, That the Philadelphia College of Pharmacy, appreciating the scientific interest manifested by Prof. Royle, and the liberal views of the donors in remembering its interests, do hereby express their appreciation of the obligation conferred on the Institution, and tender them their thanks.

It was resolved that a Committee be appointed to enquire into the reported abuse of the name of this College in connection with business advertisements.

J. C. Turnpenny, and H. C. Blair were appointed said Committee.

The following communication was read:

The undersigned request to call the attention of the College to the by-law regulating the ingress of members to the College. A few years since, in view of the increasing number of graduates of our School of Pharmacy, to draw a distinction in favor of these in the entrance of the College, and as an inducement to young men to graduate when opportunity was offered them, the by-law was so altered as to make it necessary thereafter for all applicants for membership to undergo a formal examination before the Committee of Examination appointed annually, upon whose recommendation they were to be elected. Since this by-law has been adopted, not a single application for membership has occurred, except from the Graduates of our School, although several gentlemen of good standing have intimated a desire to join us but for the process required. As in these instances the objection appeared to arise rather from pride than fear of inability to pass, and believing that there are a number of apothecaries of good standing who would join us, if our by-law was less stringent, and believing that it is of the utmost importance to the success and power of the College in carrying out the good it was designed to effect, to embrace all the reputable apothecaries in the city within its membership, that the line of membership shall indicate the line of qualification, we propose that a committee of five members be appointed to consider the subject and report a modified by law, if they deem it best, to the annual meeting in March.

SAMUEL F. TROTH,
WILLIAM PROCTER, JR.,
ROBERT P. THOMAS.

The suggestion contained in this Communication, to appoint a Committee, was adopted, and the following gentlemen were appointed:—S. F. Troth, W. Procter, Jr., E. Parrish, A. B. Taylor, J. L. Smith, and, on motion, C. Ellis, the presiding Vice President, was added thereto.

The semi-annual election for members of the Board of Trustees, was held and resulted in the election of the following members for one year.

T. P. James, A. B. Taylor, J. L. Smith, Dr. J. Harris, W. J. Jenks, Evan T. Ellis, C. Bullock, H. C. Blair, and W. W. D. Livermore for the unexpired term of Warder Morris resigned. Then adjourned.

EDWARD PARRISH, Secretary pro tempore.

CATALOGUE OF THE GRADUATES OF THE PHILADELPHIA COLLEGE OF PHARMACY FROM ITS COMMENCEMENT, WITH THE DATE OF THEIR GRADUATION.

(PUBLISHED BY ORDER OF THE BOARD OF TRUSTEES.)

Abbott, J. Henry	1851	Ellis, Evan T.	1847
Allen, John C.	1829	Ellis, William	1834
Andrews, John R.	1848	England, Robert	1846
Babb, Peter	1842	Estlack, Thomas	1844
Bache, Charles L.	1849	Evans, Jonathan Jr.	1835
Bachman, Alexander	1853	Faunce, John H.	1853
Baker, Jacob L.	1846	Finley, John D.	1851
Baker, T. Roberts	1852	Fisher, William R.	1829
Baker, William G.	1842	Garrigues, Samuel S.	1851
Bines, Samuel M.	1848	Goodyear, D. F.	1851
Blair, Henry C.	1836	Goodyear, John	1837
Bonsall, Charles T.	1853	Gormley, George M.	1852
Boyer, Caverly	1843	Grotjan, P. Adolphe	1842
Braddock, Charles S.	1851	Guillou, Alfred	1834
Bringhurst, John	1832	Gutekunst, Frederick	1853
Brodie, Robert C.	1844	Haines, Thomas	1839
Brooks, Edward	1830	Hansford, William P.	1833
Brooks, Henry	1838	Harres, J. Henry	1853
Brooks, Joseph H.	1829	Harris, Thomas W.	1838
Brown, Samuel W.	1833	Hartzwell, Charles	1849
Bullock, Charles	1847	Hasbrook, William L.	1837
Bunting, Samuel C.	1850	Hastings, Samuel	1849
Burton, David F.	1852	Hathwell, Charles	1828
Campbell, James R.	1851	Hendell, Samuel D.	1852
Canby, George	1851	Hendry, Charles D.	1830
Canedo, Cipriano	1852	Heyser, William	1852
Carter, William J.	1842	Hill, Franklin C.	1848
Chapman, William B.	1834	Hœckley, Benjamin F.	1837
Cheston, Elijah, Jr.	1853	Holden, John	1852
Cockburn, James, Jr.	1835	Hopper, Edward	1833
Coggeshall, George D.	1828	Hopkins, James	1835
Conté, Horace	1850	Hopkins, Thomas C.	1839
Cornell, Charles M.	1848	Hughes, Louis	1851
Corse, William H.	1840	Hughes, J. Curtis C.	1847
Costill, Samuel L.	1849	Husband, Thomas J.	1833
Crenshaw, Edmund A.	1849	Jenks, William J.	1842
Crew, James H.	1847	Jones, Alfred	1852
Davis, Benjamin B.	1850	Jones, Daniel S.	1843
Davis, John L.	1852	Jones, Isaac C.	1850
Davis, John W.	1853	Jones, Joshua S.	1843
Davis, Robert C.	1844	Keeney, Caleb R.	1845
Dawes, J. Crawford	1841	Kennedy, Robert J.	1837
Dawson, Alexander	1827	King, William R.	1851
Dickson, John	1846	Kitchen, William K.	1835
Dingee, Charles H.	1826	Knight, William Edwin	1838
Dingee, John Henry	1828	Kuhn, Louis De Barth	1851
Donnelly, Edward	1843	Laidley, Joseph	1850
Douglass, John Wyeth	1840	Laws, James, Jr.	1848
Duhamel, Augustine J. L.	1834	Lee, Clement J.	1835
Durand, Alfred A. B.	1851	Lee, Hiram C.	1846
Elliott, James L.	1837	Leidy, Thomas	1845
Elliott, William D.	1851	Lentner, Samuel	1847

Letchworth, Albert S.	1840
Lewis, John R.	1847
Linn, Claudius B.	1838
Livermore, William W. D.	1849
Louden, G. Graves	1847
Martin, Isaac J.	1835
McCormick, Charles	1826
McKim, Andrew	1843
McMakin, Joseph A.	1845
Mitchell, George H.	1844
Mitchell, Thomas R. F.	1837
Montgomery, Thomas H.	1851
Moore, Robeson	1829
Morris, J. H. Morton	1852
Needles, Caleb H.	1841
Needles, William N.	1845
Nichols, William St. Clair	1844
Ober, Gustavus	1837
Ogden, Edward H.	1853
Olmstead, A. J.	1835
Parrish, Dillwyn	1830
Parrish, Edward	1842
Patrick, George W.	1846
Patterson, Robert M.	1846
Peltz, Richard	1852
Perot, Joseph J.	1852
Perot, T. Morris	1849
Peterson, Wetherill	1851
Pleasants, Charles E.	1829
Pollard, Oscar	1853
Pollitt, Edmund	1848
Potts, Robert B.	1838
Powers, Thomas H.	1833
Price, Richard	1835
Procter, Stephen	1834
Procter, William Jr.	1837
Pyle, J. Lindley	1853
Ramsden, Robert	1851
Rand, Charles S.	1850
Reeve, Richard M.	1832
Ritter, Benjamin I.	1840
Ritter, Bradford	1852
Robinson, Edward T.	1853
Rush, Charles S.	1847
Rushton, Richard	1838
Santos, Charles A.	1848
Savery, John C.	1851
Savery, William, Jr.	1853
Scattergood, Joseph	1829
Schively, William H.	1842
Scholl, Alfred K.	1847
Scott, Thomas L.	1846
Selfridge, Matthew M.	1852
Sharp, William	1826
Sheaff, John F.	1853
Shinn, Samuel E.	1850
Shinn, Walter	1839
Shreeve, Charles S.	1835
Shrom, Charles F.	1853
Simes, John W., Jr.	1836
Simes, Samuel	1833
Simons, Charles Willis,	1833
Smith, Ambrose	1835
Smith, Benjamin R.	1846
Smith, Franklin R.	1829
Smith, Isaac Jones	1830
Smith, Jacob L.	1843
Southall, Turner H.	1853
Springer, John A.	1848
Steele, Oscar	1849
Stevens, Hennell	1853
Stoever, Charles F.	1846
Stokes, Isaac W.	1849
Stratton, James	1851
Taylor, Alfred B.	1844
Taylor, Alfred La Fayette	1847
Taylor, William	1851
Thomas, N. Spencer	1847
Thompson, Samuel	1834
Tilghman, John H.	1834
Tobey, Averey	1849
Trimble, David	1834
Trimble, Joseph, Jr.	1834
Troth, Henry M.	1851
Turnbull, Lawrence	1842
Turner, Joseph M.	1836
Turnpenny, Joseph C.	1833
Watson, William J.	1853
Webb, William B.	1845
Welding, Watson J.	1833
Wentz, Silas H.	1844
Wetherill, Samuel	1842
Whartenby, John A.	1846
Wiegand, Thomas S.	1844
Wiggan, George S.	1848
Wilkins, Charles M.	1848
Woodruff, A. Dickinson	1838
Worthington, Henry W.	1838
Wright, Peter T.	1846

Total 203.

Varieties.

EXHIBITION OF THE INDUSTRY OF ALL NATIONS AT NEW YORK, 1853.

Chemical and Pharmaceutical Products, etc.

UNITED STATES.

1. Specimens of patent fire and weather proof paint—crude and manufactured. Artificial slates manufactured from the same. William Blake, *manu.* 84 Pearl street, New York City.

2. Magnetic powder for the destruction of insects and vermin without poison. Emanuel Lyon, *manu.* 424 Broadway, New York City.

3. Calcined magnesia. Thomas J. Husband, *manu.* cor. Third and Spruce streets, Philadelphia, Pennsylvania.

4. Medicinal extracts prepared in vacuo.—Hyoscyamus, Aconite, Belladonna, Conium, Taraxacum, &c. Tilden & Co., *manu.* 98 John street, New York City.

5. Specimens of flowers of sulphur and roll brimstone. Frederick Schols, *manu.* 41 Barclay street, New York City.

6. Paris green, sulphate of copper (blue vitriol) and other chemical products, manufactured by Ludwig Brumlen, Poughkeepsie, New York. Adolphus D. Hugel, agent, 36 New street, New York City.

7. Refined camphor, kreosote, naphthaline, benzole, oxyd of mercury (red precipitate), proto-chlorid of mercury (corrosive sublimate), sub-chlorid of mercury (calomel). Charles Pfizer & Co., *manu.* 138½ Water street, New York City.

8. Chemical manure. George A. Lienau, *manu.* Philadelphia, Penna.

9. Medicine chests and medicinal preparations. Rushton, Clark & Co., *manu.* 165 Broadway, New York City.

10. Specimens of ultramarine for calico printing, manufacture of ink, paper, oil and water colors; and lake for decorative painting, printing, &c. Joseph Kohnstamm, *manu.* 4 Tryon row, New York City.

11. Double refined nitrate of potash (saltpetre). George R. Hendrickson, *manu.* 27 Barclay street, New York City.

12. Alkaloids, resinoids, and allied principles—active principles of indigenous and foreign medicinal plants. William Elmer, M. D. and A. D. Hendrickson, *manu.* 15 Hudson Place, New York City.

13. Refined paints ground in oil. Sinclair & Co., *manu.* 169 Front street, New York City.

14. A chart of chemistry, representing chemical composition to the eye by colored diagrams, the areas of which express proportional quantities. Youmans & Birdsall, 18 Park Place, New York City.

15. Fine chemicals for medicinal purposes. Louis Leroy, *manu.* 771 Broadway, New York City.

16. Chemicals and acids for the use of dyers and printers on cotton, woollen, and other fabrics. Thomas C. Jones, *manu.* 757 Washington street, New York City.

17. Fine chemical colors. William Hardegg, *manu.* 102 Fulton street, New York City.

18. Nitric (aqua fortis) and chloro-hydric (muriatic) acid: chloride and oxy-chloride of tin, aqua ammonia, and other chemicals. John D. Perrin, *manu.* Brooklyn, New York.

19. Wash-blue, manufactured from ultramarine. Augustus Bower, *manu.* 62½ Orchard street, New York City.

20. Pure alcohol and deodorized cologne spirit, 98 per cent., made expressly for medical and chemical purposes, perfumery, &c. Christian Paoli, *manu.* Lewis J. Magunson, agent, Springfield, Ohio.

21. Ultramarine blue and green. Adolphus Gomm, *manu.* 60 Nassau street, New York City.

22. Veterinary medicine chest and medicines. Charles Wills, *manu.* 50 East 13th street, New York City.

23. Mineral paint, crude and manufactured. Charles A. Mott, *manu.* Lansingborough, New York.

24. Cutch, sal-soda, nitrate of tin, indigo paste, nitrate of iron, &c. Piepenbring & Co., *manu.* 75 Pine street, New York City.

25. Fine carmine, lake carmine, lake yellow, chrome green, sap green, pink and blue, colors for Daguerreotypes; varnishes for paper, shoes, &c. John Roux, *manu.* 51 Chambers street, New York City.

26. Alcohol, coal-tar products and medicinal preparations. Philbrick, Carpenter & Co., *manu.* Boston, Massachusetts.

27. Samples of enamelled colors and fluxes for glass and porcelain painters. W. J. Hannington, *manu.* 346 Broadway, New York City.

28. Sulphate of quinine, chemically pure and free from cinchonine. Horace Riofrey & Co., *manu.* San Francisco, California. Davis & Henriques, agents, 99 Wall street, New York City.

29. Specimens of saleratus. Thomas Andrews, *manu.* 136 Cedar street, New York City.

30. Artists' colors on porcelain. Oppe & Schmuhl, *manu.* 37 Beaver street, New York City.

31. Specimens of powdered drugs. Haskell, Merrick & Bull, *manu.* 10 Gold Street, New York City.

32. Black lead crucibles. Phœnix Manufacturing Co., Taunton, Mass.

33. A fine assortment of chemicals. Powers & Weightman, *manu.* Philadelphia, Pennsylvania.

34. Chemical preparations. A. Lanning & Co., *manu.* 58 South Front street, Philadelphia, Pennsylvania.

35. Powdered drugs—tragacanth, arabic, kino, myrrh, aloes, and other gums; rhubarb, colombo, and various roots, extracts, &c. Williamson, Mann & Co., *manu.* 94 Front street, New York City.

36. Fine chrome colors. G. N. Popplein, Jr., *manu.* Baltimore, Maryland.

37. Specimens of ferro-cyanide of potassium (prussiate of potash). H. W. Worthington, *manu.* Kensington chemical works, Philadelphia, Pennsylvania.

38. Specimens of chrome green, Chinese blue and American vermillion. James A. H. Bell, *manu.* 149 Maiden lane, New York City.

39. Specimens of stove polish and black for coach painters. J. & J. L. Seabury, *manu.* 156 Chrystie street, New York City.

40. Specimens of essential oils, medicinal extracts, &c., manufactured by the Shakers. David Parker, trustee, Shaker village, New Hampshire.

41. Prepared crystal for polishing. Hastings & Co., *manu.* 37 Fulton street, New York City.

42. Fine specimens of bichromate of potash. Jesse Tyson, Jr., *manu.* Baltimore, Maryland.

43. Osborn's American water colors. Bullock & Crenshaw, *manu.* cor. Sixth and Arch streets, Philadelphia, Pennsylvania.

44. Samples of black-lead crucibles. Daniel Adee, *manu.* and agent, 107 Fulton street, New York City.

45. Specimens of bronze powder. L. Brandeis & Co., *manu.* 11 Cedar street, New York City.

46. Specimens of saleratus. Lawrence Grinnell, *manu.* New Bedford, Massachusetts.

47. Specimens of cologne spirits, deodorized alcohol, and pure spirits, William Sill & Co., *manu.* Chicago, Illinois.

48. Pure vegetable extracts and samples of packed herbs for medicinal and family use, prepared by the Shakers. Edward Fowler, agent, New Lebanon, New York.

49. Citrate of magnesia. Samuel C. Sheppard, *manu.* Philadelphia, Penna.

50. Specimen of salt. Ruffner, Donally & Co., *manu.* Kanawha Salines, Virginia.

51. Specimens of solar coarse salt. Samuel C. Brewster, *manu.* Geddes, Onondaga county, New York.

GREAT BRITAIN AND IRELAND.

1. New inks for staining oak and mahogany, with specimens of the stained woods. James Hawthorne, *inv.*, 78 Charrington street, London.

2. Samples of colors on porcelain. George Lockett, *manu.* Staffordshire.

3. Preparation to protect grain from smut and from the attacks of caterpillars. David Clarke, chemist, *inv. & manu.*, Bedfordshire, England.

4. Mineral colors, raw and manufactured, for oil paints and paper staining; mineral yellow, dream ochre, Indian red, vermillion, burnt umber, &c. Ellam, Jones & Co., *manu.* Markeaton mills, Derby, England.

5. Samples of colors and chemical productions. William Dawson, *manu.* North British color and chemical works, Leith, Scotland.

6. Specimens of aloin and caffeine. Thomas and Henry Smith, 21 Duke street, Edinburgh, Scotland.

7. Specimens of Peruvian, cinchonine and quinidine barks; sulphates of quinine, cinchonine, and quinidine; Epsom salt; Rochelle salt; phosphate of soda; sulphate of iron; citric and tartaric acids; citrates and tartrates of of potash and corrosive sublimate; red precipitate; borax; carbonate of iron; calomel; soda. Howards & Kent, *manu.* Stratford, England.

8. A variety of chemical productions. Dinneford & Co., *inv. & manu.* 172 New Bond street, London.

9. Calcined magnesia and carbonate of magnesia. Thomas Jennings, *manu.* Brown street, Cork, Ireland.

10. Bicarbonate of soda. C. Allhausen & Co., Tyne chemical works, Gateshead, near Newcastle-upon-Tyne, England.

11. East Indian drugs and medical plants. Matthew Pound, 60 Leather lane, Holborn, London.

12. Drugs and chemical productions. Lea & Perrins, *manu.* Worcester, England.

13. Specimen of carbonate and calcined magnesia, and other chemical productions. George Shaw, *prod.*, Glasgow, Scotland.

14. Crystals of sulphate of iron (copperas). Trustees of the late J. Buckley, *manu.* Manchester, England.

15. Large crystals of the sulphate of barytes. John Cooper, Jr., *manu.* Ashton, Cumberland, England.

16. Specimens of the various alkaloids. John Clarke, *manu.* Manchester, England.

17. Dried preparations of British indigenous plants; fluid extracts of taraxacum and colchicum; green and black tea shrubs. James H. Kent, *prod.* Bury St. Edmonds, England.

ZOLLVEREIN AND GERMANY.

1. Chloroform, ether, and other chemical productions. Dr. L. C. Marquart, *prod.* Bonn, on the Rhine.

2. Variety of chemical productions. Wilhelm Guttler, *manu.* Reichenstein, Prussia.

3. Specimens of black for copper-plate printers. J. Petry, *manu.* Mentz, Hesse.

4. Essential Oils. Spahn & Schimmel, *manu.* Leipsic, Saxony.

5. Chemical preparations for printers and dyers. Krimmelbein & Bredt, *manu.* Barmen, Westphalia.

6. Extracts of aromatic herbs. J. F. Merkel, *prod.* Leipsic, Saxony.

7. Specimens of bronze colors, and metallic leaf. Buckner & Hartmann, *manu.* Nuremberg, Bavaria.

8. Samples of ultramarine colors. Wolf & Co., *manu.* Schweinfurt, Bavaria.

9. Specimens of ultramarine colors. Heinrich Gademan, *manu.* Schweinfurt, Bavaria.

10. Pure kreosote, of great refracting power. F. J. Bronner, *manu.* Frankfort-on-the-Maine.

11. Specimens of ultramarines and mineral colors; mahogany dyes; various ochres and chromes; lacs of all colors; ivory black, &c. Puscher, Brothers, *manu.* Nuremberg, Bavaria.

12. Specimens of ultramarines and Paris blue; blue prussiate of potash. J. N. Adam, *manu.* Rennweg, near Nuremberg, Bavaria.

13. Complete series of German mineral, vegetable and animal substances, used for chemical, pharmaceutical and manufacturing purposes. Gehe & Co. *manu.* Dresden, Saxony.

14. Samples of matches. Riedel & Co., *manu.* Dersdorf, near Wimpstel, Bohemia.

15. Specimens of ultramarine. Wilhelm Buchner, *manu.* Darmstadt, Hesse-Darmstadt.

16. Bronze color and powders. J. Brandies, Jr., *prod.* Fürth, Bavaria.

17. Samples of white lead and superfine colors. Strasburger & Nuhn, *manu.* Thuringen, Saxony.

18. Essential oils. Trepte & Ferke, *manu.* Leipsic, Saxony.

19. Variety of colors. Carl A. Kieser, *prod.* Langeweisen, Thuringen, Saxony.

20. Elixir. J. G. Mueller, *prod.* Leipsic, Saxony.

21. Specimens of manganese. F. Kœnig & Co. *prod.* Langeweisen, Thuringen, Saxony.

22. Nickel, with ultramarine; blue colors; smalt, washing-blue, &c. Electoral Hesse smalt works, *manu.* Schwarzenfeldt, Hesse-Cassel.

23. Ultramarine, exhibited for color and cheapness. Breuninger & Son, *manu.* Kirchheim, Wurtemburg.

24. Blue and green ultramarine, used by printers and varnishers. They resist alum, and the air improves the color. Julius Curtius, *prod.* Duisburg, Rhenish-Prussia.

25. Samples of a variety of colors. George H. Habich, *prod.* Cassel, Hesse-Cassel.

26. Specimens of ultramarine. Ch. Adam Fries, *prod.* Heidelberg, Baden.

27. A variety of chemical productions. Kunheim & Co. *prod.* Berlin, Prussia.

28. Rectified cognac oil, manufactured out of common gin, or thinned spirits. Carl Wissenbach, *manu.* Frankfort-on the Maine.

29. Etherial oil; chemical productions. Lampe & Kaufman, *prod.* Berlin, Prussia; agents, Koop, Fischer & Co., New York city.

30. Specimens of zaffre and fine azur-blue smalt. Horstmann & Co. *manu.* Horst-on-the-Ruhr, Prussia; Victor & Achelis, agents, 50 Broadway New York city.

31. Specimens of chremnitz, carbonate and acetate of lead. Gustavus Dietil, *manu.* Eisenach, Saxe-Weimer.

32. Specimens of refined sulphur, cast in figures. Dr. Clemm Lennig, *manu.* Wohlgeleigen, near Manheim, Baden.

33. Two vases of refined sulphur. C. Zimmer & Co., *manu.* Frankfort-on-the-Maine.

34. Specimens of alkaloids. E. Merck, *manu.* Darmstadt, Hesse-Darmstadt.

35. Specimens of ultramarine colors. Dr. C. Leverkus, *prod.* Rhenish Prussia.

36. Munich carmine; lacs, and other colors. H. Siegle, *prod.* Stuttgard, Wurtemburg.

37. Lamp black, ivory black, varnish black, Frankfort black; paste black in liquid, &c. Michel & Morell, *manu.* Mentz, Hesse.

38. Indigo, carmine, &c. Robert Knosp, *prod.* Stuttgart.

39. Stoughton's elixir. J. Robertz, *manu.* Coln, Rhenish Prussia; agent, H. Roesberg, 98 Pearl street, New York city.

FRANCE.

1. Various kinds of medical preparations for veterinary purposes. Mirmont, *manu.* Mune, Oise.

2. Specimens of sundry chemical productions. Lefevre, Sen. Nantes, *manu.* Loire Inferieure.

3. A variety of chemical productions. A. Caron, *manu.* Paris.

4. A variety of colors. H. Vallie, *manu.* Paris.

5. Powder for fermenting. Carton Eckman, *manu.* 10 Rue St. Andre, Lille, Nord.

6. Various specimens of colors and varnishes. Louis Viard, 128 Rue St. Martin, Paris.

7. Specimens of unalterable pills of the iodid of iron. H. Blancard, 51 Rue de Seine, Paris.

8. Samples of ultramarine and azure blue. Bonzel, Brothers, *manu.* Haubordin, Nord.

9. Specimens of mastic Serbat. L. Serbat, St. Saulve, Nord.

10. A variety of pharmaceutical productions. Reynal & Co., *manu.* (successors of H. Flon), 32 Rue Faitbout, Paris.

11. Flagons of ultramarine blue, applicable to the fine and industrial arts. J. B. Guinnet, *manu.* 9 Place des Carmes, Lyons, Rhone.

12. Extracts of various dye-woods, for calico printing. A. Michel, *manu.* 9 Quay National Puteaux, Seine.

13. Samples of artificial ultramarine, blue, green, and black. Zuber & Co. *manu.* Rixheim, Haut Rhin.

14. Samples of various colored madders, for dying silks and satins, invented by Schwartz. Thomas, Brothers, *prop.* Avignon.

15. Specimens of "Brocchieri Fluid." P. Brocchieri, *pat. & manu.* 21 Rue Louis-le-Grand, Paris.

16. Various drugs and pharmaceutical extracts. Menier & Co., *manu.* 37 Rue St. Croix de la Brettonniere, Paris.

SWITZERLAND.

1. Mineral water-proof composition for linen, pasteboard, iron, and glass, with various exhibitions of its application to vessels, cloth, thread, ropes, &c., making them perfectly impermeable to water. Frederic Lauterburg, *manu* 16 Rue de l'Arsenal, Berne, Canton Berne.

HOLLAND.

1. Veterinary medicines of various descriptions. A. Jorietsma, *inv.* Dodkum, Netherlands.
2. Specimens of white lead manufactured by a new process. G. A. B. Schierenberg, *inv. & manu.* Horn, near Detmold, Netherlands.
3. Specimens of Friesland green and other colors. Suringer & Sons, *manu.* Groningen, Netherlands.
4. Samples of white lead. Beekhuis, Damste & Co., *manu.* Groningen, Netherlands.
5. Specimens of zinc paints. Prof. S. Bleekrode, *inv.* Delft, Netherlands.

AUSTRIA.

1. Medical plants, and various chemical and pharmaceutical productions. Wenzel Batka, Prague, Bohemia.
2. Specimens of orange and bright red lead; red and gold litharge; and white lead. Ignatz Von Herbert, *manu.* Klakenfurt, Carinthia.
3. One hundred and eighty samples of colors. Kinzelberger & Co., *manu.* Prague, Bohemia.
4. Various shades of ultramarine; cadmium yellow; red and rose madder. J. Setzer *manu.* Weiteneggk, on the Danube.
5. Specimens of Naples yellow and artificial pumice stone. L. & C. Hardmuth, *manu.* Budweis, Bohemia.
6. Samples of carmine of two kinds. W. Petz., *manu.* Pesth, Hungary.
7. Samples of prepared and unprepared agaric, fusee amadon, medicated agaric, agaric hypsic. A. Bachrich, *manu.* Vienna.

ITALY.

1. Variety of chemical productions: chemical matches, nitric and sulphuric acids, phosphorus, glue, soda, nitrate of barytes, artificial soda, &c. Albani, Bros., *manu.* Turin, Sardinia.
2. Specimens of sulphate of quinine. Antonia Puccio, *manu.* Genoa, Sardinia.
3. Specimens of yellow sulphuret of arsenic, (orpiment), extracted from the auriferous minerals of the Carri mines in the valley of Ossola. C. Erba &Co., Genoa.
4. Liquid citric acid, white and pure olive oil, cream of soap, &c. Dr. G. Amadeo, *manu.* Turin, Sardinia.
5. Specimens of ergot, extracted from rye. Luigi Parola, *prod.* Cuneo, Sardinia.
6. Samples of the sulphate and citrate of quinine. L. Dufour, *manu.* Genoa, Sardinia.
7. Specimens of prepared ergot. C. J. Bonjean, chemist, Chamberry.
8. Specimens of chemical products. Sclopis, Brothers, *manu.* Turin, Sardinia.
9. Samples of chrome yellow, lake green, Berlin blue, silver white, &c. Augusto Bo, *manu.* Turin, Sardinia.
10. Gelatine capsules of white and red balsam of copaiba; camphorated cigars—a new invention. Bernardino Scola, *inv. & manu.* Turin, Sardinia.

BRITISH GUIANA.

1. Barks of curabella and mariaba from Demarara river; carkaralli nuts and wild coffee. E. S. Brotherson, Demarara.
2. Barks of simaruba officinalis, curahara, wadadura (lecthys grandiflora), muraballi, dahli (viola sebifera), and various stems of medicinal plants used as Indian remedies, from Pomeroon, Essequebo. W. C. McClintock, Demarara.

3. Barks of greenheart tree (nectandra rodiei) from Demarara river; angostura (cusparia officinalis), from Pomeroon; mangrove (rizaphora racemosa), from Demarara. J. S. Stutchbury, Demarara.
4. Barks of male cashew and the hog plum (spondias lutea). George Tiglie, Demarara.
5. Stems of quassia amara. H. M. Greene, Demarara.
6. Stems of boieari. B. Ries, Demarara.
7. Stems of cramata, from Berbice river. John McClelland, Demarara.
8. Accawai nuts (acrodiclidium camara), from Demarara river. John Taggart.
9. Physic nuts (jatropha curcas). D. Powell, Demarara.
10. Carapa nuts in the capsule (xylocarpa carapa). W. C. McClintock, Pomeroon.
11. Creeping plant, supposed to be the juaco. W. P. Latorff, Demarara.
12. Conuria braziliensis. W. H. Holmes, Essequebo.
13 Fit-weed (eryngium fœtidum) Daniel Blair, Demarara.
14. Hyawa gum (icica heptaphilla) W. C. McClintock, Pomeroon.
15. Laurel oil; balsam copaiba; crab oil; sulphate of bebeerine. J. S. Stutchbury, Demarara.
16. Laurel oil. R. J. Knowles.
17. Sulphate of bebeerine from the nectandra rodiei. Dr. Hugh Rodie, Demarara.
18. Mocco; mocco juice (caladium arborescens). Dr. J. Ross, Essequebo.

[The above lists are taken from the published catalogue of the exhibition, which is understood to be imperfect, in so far as it does not include some of the contributions. Those from Canada for instance. The publication of the whole list will enable our readers to compare the nature of the contributions of the several countries. A special notice of some of the contributions will be found in the editorial department.—EDITOR.]

Editorial Department.

EXHIBITION OF THE INDUSTRY OF ALL NATIONS, AT NEW YORK, 1853: CHEMICAL AND PHARMACEUTICAL PRODUCTS.—At this time, when Chemistry plays so prominent a part in the progress of science, of medicine and pharmacy, and of the ornamental arts and manufactures, it was to be expected that the chemical manufacturer would figure largely in an exhibition claiming to represent the industry of all nations. After a pretty thorough examination of what has been sent, we confess to a feeling of disappointment as regards our own as well as foreign countries, in several of which this branch of manufacture is carried on to an extent and with a success not known here. The committee of arrangement have placed chemical and pharmaceutical products and processes in the same class as the coloring substances and dyes and some miscellaneous articles. Of the fifty-one deposites from the United States, noticed in the published list, fourteen are colors and paints, eight miscellaneous, ten pharmaceuticals, and nineteen chemicals. The finest display both as regards quantity, variety, and rarity is that of *Powers & Weightman*, of Philadelphia. The most conspicuous item is a cylindrical tumbler-shaped mass of alum, weighing many hundred weights, just as taken from the crystallizer, except that a section has been removed by the saw to exhibit the beauty of the interior. Among the liquids we observed acetone, chloroform, butyric acid, butyric ether, acetic acid, acetic ether, acetic amylic ether, valerianic acid, lactic acid, and the oils of cloves, caraway, copaiba, black pepper, and pimento. Among the solids, the sulphates of quinia and morphia, strychnia and its salts, brucia, santonin, caffein, meconin, menispermia, gallic acid, lactate of iron, iron by hydrogen, cyanide of copper, &c.

Rosengarten & Denis, of Philadelphia, exhibit nitrate of silver, sulphate of quinia, strychnia, sulphate of strychnia, veratria, sulphate of morphia, and piperin. The sulphate of quinia in this lot was particularly fine.

Charles Pfizer & Co., of New York, exhibit refined camphor in discs, napthaline, benzole, kreasote, calomel, corrosive sublimate, and red precipitate.

Among the pharmaceutical preparations, the powdered drugs of *Haskell, Merrick & Bull*, of New York, the vegetable extracts prepared in vacuo by *Tilden & Co.*, of New Lebanon; the extract of valerian from American grown root, and colorless oil of wintergreen, by *David Parker*, of the *Shakers* of New Hampshire; the magnesia of *Thomas J. Husband*, of Philadelphia; and the general display of Pharmaceutical preparations of *C. Ellis & Co.*, of Philadelphia, deserve particular mention.

GREAT BRITAIN.—The British contribution is very meagre, but a few of the numerous noted English and Scotch manufacturing chemists are represented.

Howards & Kent, Stratford, London, exhibit sulphates of quinia and quinidin, and quinoidin, and the barks affording them, Rochelle salt, citric and tartaric acids, corrosive sublimate, calomel, &c.

T. & H. Smith, of Edinburg, have deposited two specimens of crystals of aloin from socotrin aloes, (the principle discovered by them in Barbadoes aloes,) and a fine specimen of caffein, all under glass.

James H. Kent, of Staunton, Suffolk, exhibits a variety of dried medicinal plants, enclosed in green glass gallon bottles and sealed. These specimens are particularly deserving, having been dried with the greatest care. The green color of the leaves and the natural tints of the flowers are but slightly impaired by the desiccation. Among them we noticed filix mas, stramonium, helleborus fœtidus, digitalis, rosa gallica, aconite, hyoscyamus, belladonna, valerian root, red poppy petals, chamomiles, blue mallows, conium seed, colchicum seed and flowers, buck-bean leaves, dulcamara leaves, daphne, laureola, and many others.

The same depositor exhibits liquor taraxaci, ext. taraxaci fluid, extract taraxaci flores, succus taraxaci, (with the sediment,) succus cotyledon umbilicus, ext. arctii fluidum, ext. chamomæli fluidum, ext. belladonæ fluidum, ext. menyanthes trif. fluidum, ext. juglandis fluidum, ext. dulcamara fluidum, ext. rutæ fluidum, and the fluid extracts of white and red poppies. The whole have the appearance of having been carefully prepared, and are very creditable.

The Zollverein and Germany.—The contribution of the German States exceeds that of all other nations, and several of the deposits are remarkable for their great variety, richness, and rarity, and we confess to have been highly gratified with their inspection, containing, as they do, many chemicals that we have never before met with, either in commerce, or in the cabinets of chemists.

Gehe & Co., of Dresden, Saxony, in addition to chemicals, exhibit porcelain and porphyry chemical ware, and an extensive cabinet of materia medica specimens, several hundreds in number, arranged in separate apartments under glass cases. Among these we noticed, rad. asphodeli, rad. asari, rad. aronis, aristolochia longa and rotunda, kousso, (flowers) pulsatilla, melilot, lycopodium herb, gratiola, fol. ilicis aquefolium, fructus cynosbati, fol. lauro-cerasi, cera nigra, cera alba japonica, cortex frangula, Sumatran benzoin, caranna gum, white, green, and red dammar resin, euphorbium, galbanum in tears, hedera, kino, opoponax, guaiacum in tears, sagapenum, sarcocella, white tacamahaca, sandarac, Siam benzoin, bdelium, oriental bezoars, crab stones, millipedes, dried jujubes, calamine in mass, nag kasser, pomegranate flowers, red coral, baccæ acaciæ, baccæ alkekengi, metallic cadmium, mylabris cichorii, anacardium orientale, mother cloves, Tonquin musk pods, sugar of milk in columns, amber of several qualities, scammony of several qualities, mistletoe, musk root, (Sambul) rad. valerianæ major, salep, turpeth root, saponaria alba, pellatory, Austrian rhubarb in conical pieces, hermodactyles, cypripedum rotundum, briony, etc.

Among the organic principles we noticed, meconin, menispermia, narcotina, ononin, oxycanthin, papaverina, peucedanin, picrotoxin, rhubarbarin, rhein, solania, theobromin, carvacrol, elaterin, quassin, sanguinarina, bebeerin, atropia, asarone, anemonin, æsculin, aconitia, caffein, ergotin, conia (colorless), indigotin, nicotin, xylostin, jalapin, hæmatoxylin, glycyrhizin, gentisin, filicin, digitalin, emetina, daturia, delphinia, colombin, colocynthin, codeia, chelidonin, cetrarin, cantharidin, brucia, phloridzin, piperin, urea, salicin, mannite, amygdalin, aloxan, quinia, and cinchonia; kinic, valeranic, succinic, uric, picric, uvic (or paratartaric), benzoic, gallic, pyrogallic, hippuric, kinovic, meconic, anemonic, butyric, and malic acids; œnanthic, formic, acetic, amylic, butyric, valerianic, and chloric ethers; volatile oils of vitis vinifera, salvia, ruta, (seed and herb,) rosæ (pure), millifolium, melissa, majoram, lauro-cerasus, lauras, hysoppus, cuminum, cardamomi, angelica, and numerous others.

In addition to these organic principles, a great variety of rare and beautiful mineral salts and compounds, all like the preceding, enclosed in glass stopped vials and bottles, and appropriately labelled. As a whole, this is the most complete cabinet of the kind we have ever met with.

The specimens of *E. Merck*, of Darmstadt, Hesse-Darmstadt, are remarkable for their rarity, beauty, and purity, and being, as they are, his own manufacture, they are unsurpassed by any similar deposit in the exhibition. They include veratria (in crystals), menispermia, digitalin, filicin inulin, iodoform, cantharidin, gentisin, theobromin, atropia, picrotoxin, brucia, asparagin, amygdalin, narcein, papaverina, ononin, cubebin, narcotin, peucedanin, santonin, phloridzin, jalapin, salicin, cinchonia, strychnia, codeia, morphia, caffeine; and tannic, hippuric, gallic, pyrogallic, and kinic acids. These specimens are in bottles from two ounces to sixteen ounces capacity, and are in most instances beautifully crystallized.

O. Herman, for the Royal Prussian manufactory, deposits the following specimens in gallon bottles:—pure carbonate of potash, iron alum, nitrates of strontia and baryta, succinic acid, gallic acid, glacial phosphoric acid, potassium, sodium, caustic potash, and hyposulphite of soda. The alkaline metals and the phosphoric acid were very fine specimens, and the whole are of excellent quality.

Dr. L. C. Marquart, of Bonn, exhibits bromine, chloroform, acetic and acetic amylic ethers, oxide of uranium, and nitrobenzyl, or artificial oil of bitter almonds.

Spahn & Schimmel, of Leipsic, Saxony, and *Trepte & Ferke* of the same place, exhibit a variety of volatile oils.

France.—The French manufacturing chemists have not availed themselves of the exhibition to expose their products. Menier & Co., of Paris, exhibit powdered drugs and vegetable extracts. Of the latter several have been prepared in vacuo, and present the form of desiccated frothy masses The color indicates careful preparation.

Austria.—In the Austrian department, *Wenzel Batka*, of Prague, Bohe-

mia, deposits a variety of chemical glass ware, agate mortars, crystal models, etc. Some of the articles are beautifully made.

Italy.—The Italian department contains no deposits requiring particular notice.

Besides drugs, chemicals, and pharmaceutical preparations, chemical and pharmaceutical apparatus, by *Luhme*, of Berlin, and others, is exhibited, but our space does not admit of a further notice at this time. The display in this department is by no means extensive, however, especially in view of the numerous ingenious arrangements that are common in German laboratories.

Meeting of the American Pharmaceutical Association.—Our readers will find a full account of the "Proceedings," in this number. The attendance was encouraging, good feeling and earnestness prevailed, and the brethren in Boston extended their usual courteousness and hospitality to their guests. On Thursday evening, (Aug. 25th,) after the spicy discussion of the drug law, the members were invited to the "Pavillion," where everything was "good of its kind, and not only good but the best," a fact which the most ultra "treasury instructions" men did not dispute, after a very thorough inspection. Several medical gentleman were present, and among them Dr. J. V. C. Smith, of the Boston Medical and Surgical Journal, who, in responding to a call, gave a sketch of Pharmacy and pharmaceutists in Egypt and Constantinople, as observed in his recent travels.

The Index.—To occupy less space we have adopted the plan of a single index in the future, but have included the names of authors in alphabetical order among the other items, distinguishing them by *italics*.

The Prescriber's Pharmacopœia: Containing all the Medicines in the London Pharmacopœia, arranged in Classes according to their action, with their Composition and Doses. By a Practising Physician. Altered to correspond with the U. S. Dispensatory. Revised, with additions. Third American from the fourth London edition. By Thomas F. Cock, M. D. New York. S. S. & W. Wood, 1853. 24mo. pp. 178.

The object of this little book is obvious—it is a pocket companion to the practitioner—intended as a ready reference in composing prescriptions, when the memory needs refreshing in reference to the composition and doses of officinal preparations. The American editor, to render it more useful, in addition to the general adaptation of the formulæ to correspond with the U. S. Dispensatory, has added hints on the uses of medicines, a chapter on diet for the sick, and formulæ for proprietary and other medicines more or less known. So much for the object of the book and the American improvements. So long, however, as American practitioners are served with such Anglo-American hybrid formularies—and in so speaking we by no means confine the remark to the "Prescriber's Pharmacopœia"—so

long will the nomenclature of *written* prescriptions continue to diverge in an hundred ways from the plain and beautiful nomenclature of the United States Pharmacopœia,and apothecaries be puzzled and annoyed by the necessity of remembering several names for the same substance or preparation.

Coxe's Companion to the Medicine Chest, and Compendium of Domestic Medicine; particularly adapted for captains of merchant vessels, missionaries, and colonists, with plain rules for taking the medicines; to which are added directions for restoring suspended animation, the method of obviating the effects of poisons, a plain description of the treatment of fractures and dislocations, and a concise account of Asiatic and spasmodic cholera. Revised and considerably enlarged by R. Davis, member of the Royal College of Surgeons, assisted by some of the most eminent physicians and surgeons of the day. First American from the thirty-third London edition. New York. S. S. & W. Wood, 1851. pp. 216. 12mo.

General Board of Health. Second Report on Quarantine. Yellow Fever. With Appendices. Presented to both Houses of Parliament by command of Her Majesty. London, 1852. pp. 409. 8vo.

This valuable report on the question of the propriety and usefulness of quarantine as a protection in yellow fever epidemic, is based on a wide extent of observations in the countries where yellow fever prevails, by numerous observers in the medical corps of the army and navy of Great Britain, and by other medical gentlemen; and on a careful analysis of the facts attending the alleged importation of yellow fever into Gibraltar and other places. The commissioners arrive at the conclusion that the tendency of quarantine is useless and mischievous, and that the true preventive means are in obeying the laws of municipal hygiene, by effecting those "sanitary works and operations, having for their object the removal and prevention of the several localizing conditions, and when such permanent works are impracticable, the temporary removal, as far as may be practicable, of the population of the infected localities."

Appendix to the Report of the General Board of Health on the Epidemic Cholera of 1848 *and* 1849. Abstract of Report by James Wynne, M. D., on epidemic cholera as it prevailed in the United States in 1849 and 1850. Presented to both Houses of Parliament by command of Her Majesty. London, 1853. pp. 93. 8vo.

Discourses delivered by Appointment before the Cincinnati Medical Library Association, January 9th and 10th, 1852. By Daniel Drake, M. D. Cincinnati, 1852. Wood & Anderson. pp. 93. 12mo.

Coal Tar Products and deodorized Alcohol of Philbrick, Atwood & Co., of Boston.—We have received from these gentlemen specimens of benzole, rectified naphtha, toluole, coup oil, naphthaline and asphaltum, derived from coal tar, as prepared at their laboratory. Each barrel of the tar yields about half a gallon of benzole, 1½ gallons of naphtha, half a gallon of toluole, 5 gallons of coup oil, and 150 lbs. of asphaltum. The first three are beautifully transparent and colorless, and strongly refract light. The coup oil is used as a lubricating oil, in place of the best sperm, to which it is said to be superior, and is the most valuable of the products as an item of manufacture. The benzole, and naphtha, and toluole, are used as solvents for copal, caoutchouc, &c., or for illuminating purposes. The naphthaline has been recrystallized from alcohol, and is in brilliantly white scaly crystals. The asphaltum answers the purposes of ordinary asphaltum for cements and varnishes.

The alcohol of Messrs. Philbrick, Atwood & Co., is deodorized by a process discovered by Mr. Atwood, in which manganic acid is employed. It is entirely deprived of whiskey odor and taste, and is admirably fitted for pharmaceutical use.

School of Pharmacy. Qualifications for Graduation.—Our junior readers, and more especially those in distant cities where colleges of pharmacy do not exist, are invited to examine the advertisement of our School of Pharmacy, as regards the recent modification of the by-laws regulating the qualifications of applicants for the Diploma of the College. The additions are in italics. Young men at a distance who are desirous of completing their pharmaceutical studies, by graduating in the Philadelphia College of Pharmacy, are thus afforded an opportunity to do so, with the sacrifice of but one season spent in Philadelphia.

TO CORRESPONDENTS.

"*Laeno*," Baltimore. To give the answers as requested would require far more detail than our time or space will permit. 1. Of Books—Morfit's Chemical Manipulations, and Fresenius' Chemical Analysis. 2. The "fixtures" and implements necessary will depend upon the extent of the investigations pursued. The indispensables are a good balance, a properly arranged gas burner or alcohol lamp, a platina crucible, a blow pipe, one or more small mortars, some capsules of porcelain, watch glasses, flasks, tubes, retorts, and other glass-ware, a set of test solutions, test papers, filtering paper and small funnels, all of which can be better understood after reference to Morfit's work. To become "an *ordinary analytic chemist*" is a very different thing from performing an ordinary analysis. The latter may be accomplished by the aid of books and a little experience, just as one may translate from a strange language by aid of a dictionary and grammar. The former requires a great deal of knowledge, only attainable by observation and repeated experience, and considerable skill. 3. As regards "what course of instruction is requisite," we must answer, either the slow and indirect method by books and self tuition, or directly under the guidance of an experienced analytical

chemist. 4. It *is* possible to attain considerable skill (in the ordinary course of business) in analyzing many mineral substances, especially when pursued with interest. We advise *Lueno* to get Morfit and Fresenius, examine them carefully, and then if he determines to study analysis, begin with the simplest operations and apparatus, and follow and apply t hem with an unfailing supply of steady perseverance.

"*M. D.*" Kensington, is advised to provide himself with a suitable blank book, in which he should record, 1st, Technical words not understood, in the course of reading; 2d, ideas or processes which he finds reference to in reading and desires to acquaint himself with; and 3d, Phenomena or curious results presented in the course of business that his present knowledge does not enable him to fully explain.

The ninth edition of the United States Dispensatory, Fownes' Chemistry, and Mohr and Redwood's Pharmacy, embrace ample materials for his purposes. The Dispensatory, as the expounder of the Pharmacopœia, is the beginner's *Koran*; but it should be studied with a view to his present wants. In the Materia Medica much that is purely botanical and medical may be glanced over slightly in his preliminary study, while the sensible and chemical properties and commercial history of drugs should be carefully read. Having thus acquainted himself with the characters of a drug, he should study the preparations into which it enters, at the end of the book, so as to get a clear idea of the drug and its preparations as a distinct subject. By persevering in this course, noting down difficult and obscure points, he will when ready for the lectures have a solid mass of knowledge upon which to base his collegiate instruction. Fownes' works will assist him in the chemical articles where he needs purely chemical explanations, and the practical details and illustrations of Mohr and Redwood will add interest to his more practical duties.

"*E. H. P.*" encloses to us a letter from an old and respectable physician of Howard county, Maryland, in reference to Spigelia. Dr. J. Waters says, "I should like to have some genuine pink root, which I apprehend is not to be had; the article as we now get it *is the root only*, and is not better than chinquepin burr broth: as we used to get it forty years ago it was a powerfully efficaceous vermifuge, highly useful in all diseases of children complicated with worms; but now as we get the root only it appears to be perfectly inert." Dr. Waters thinks the plant should be gathered when the flower commences to fade and the top and root used together; he desires to call attention to the subject.

We have not met with the difficulty indicated, where the root is in good condition, nor has E. H. P. The tops were formerly gathered with the root, but the practice has been discontinued, from the general belief in the superior efficacy of the root.

Death of Gmelin.—Science has suffered a great loss by the death of the distinguished chemist, Dr. Leopold Gmelin, the discoverer of the red prussiate of potash, &c., and the author of a valuable and extensive Hand-book of Chemistry, a translation of which is now in the course of publication by the Cavendish Society. He died at Heidelberg on the 13th of April of this year, where he had been for many years Professor of Chemistry.—*Annals of Pharmacy.*

Death of M. Arago.—This illustrious savant died at Paris on the first of October, aged 67 years. His life has been devoted to the sciences, of which he was one of the most eminent cultivators of the present century.

INDEX

TO VOL. XXV. (VOL. I., THIRD SERIES) OF THE AMERICAN JOURNAL OF PHARMACY.